

THE COMMONWEALTH OF MASSACHUSETTS  
BOARD OF EDUCATION

---

THE NEEDS AND POSSIBILITIES OF  
PART-TIME EDUCATION

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A Special Report submitted to the Legislature  
January, 1913





The Commonwealth of Massachusetts.  
BOARD OF EDUCATION.

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A SPECIAL REPORT  
ON THE  
NEEDS AND POSSIBILITIES OF  
PART-TIME EDUCATION.

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JANUARY, 1913.



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# The Commonwealth of Massachusetts.

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## REPORT ON PART-TIME EDUCATION.

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*To the Honorable the Senate and House of Representatives.*

In accordance with the provisions of chapter 64, Resolves of 1911, relative to the need and practicability of part-time schooling, vocational or otherwise, for working children, the Board of Education herewith submits the results of the investigation, together with its recommendations.

The investigation was made and the report prepared under the direction of the Board by Commissioner of Education, David Snedden, assisted by Special Agent Michael W. Murray.

The Board adopts the report and endorses the recommendations.

FREDERICK P. FISH, *Chairman*,  
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*Members of the Board.*

JAN. 1, 1913.



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# PART I.

## GENERAL REPORT.

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### I. AUTHORIZATION.

The following is the text of the resolve passed by the Legislature:—

#### RESOLVES OF 1911, CHAPTER 64.

*Resolved*, That the board of education is hereby authorized and directed to investigate the need and practicability of part-time schooling, vocational and otherwise, for working children, and also the establishment of an apprenticeship system, especially for children between the ages of fourteen and seventeen years. The board shall investigate and report as to the means now existing which might be used to furnish vocational training, and is authorized to employ such agents as may be necessary to collect pertinent information from employers and others. The board shall report the result of its investigations with its recommendations, in print, to the general court not later than the second Wednesday in January, nineteen hundred and thirteen. For the purposes of this resolve, there shall be allowed and paid out of the treasury of the commonwealth a sum not exceeding six thousand five hundred dollars.

In compliance to this resolve, the Board of Education directed the Commissioner of Education to make the necessary investigations and engage expert assistance. Mr. Michael W. Murray, director of vocational education for the city of Newton, was engaged as chief special agent to assist the commissioner in directing the study and preparing the report.

Special acknowledgment is here made of the assistance of the following: Mr. Charles A. Prosser, secretary of the National Society for the Promotion of Industrial Education; Dr. Susan M. Kingsbury, director, Research Department, Women's Educational and Industrial Union; Mrs. John T. Prince, director, School of Salesmanship, Women's Educational and Industrial Union, who is responsible for Appendix G; Mr. Wm. H. Doo-

ley, director, Lowell Industrial School; Mr. Charles Mills, general superintendent, Saco-Petee Machine Company; Miss Ruth Evans and Miss Abigail D. Steere, fellows of the Research Department of the Woman's Educational and Industrial Union.

In making this report the problem has been considered under the four following heads, suggested by the resolve:—

*A.*—Is there a need of part-time schooling, vocational or otherwise, for working children?

*B.*—Is there a need of an apprenticeship system, and can such a system be established?

*C.*—Is a program of part-time schooling, vocational or otherwise, practicable?

*D.*—What means now exist which might be made to furnish vocational training?

## II. DEFINITION OF PART-TIME SCHOOLING.

Large numbers of young persons must enter upon productive employment before they have received as complete a liberal and vocational education as the best interests of the individual and of society require.

A system of part-time schooling aims to give to persons already employed in productive work the opportunity to devote a portion of their working time to attending school. The problem of part-time schooling or part-time education is, then, so to organize schools on the one hand and industries on the other that the young worker, while receiving due compensation for service rendered, may be enabled to distribute his time between a school and his productive employment in such a way as to make possible an effective education.

The portion of the training given in school should aim (*a*) to utilize the practical experience of the learner in conjunction with special studies, to the specific end of promoting vocational efficiency; and (*b*) by appropriate studies of a liberal nature to promote general culture and civic efficiency.

Under the system of apprenticeship once prevailing, modified forms of part-time education were often found. Apprentices, while performing regular tasks in the workshop, counting-room or on the farm, were required to give stated amounts



of time each day to attendance on classes for systematic study. In Germany and other countries this practice developed into organized forms of continuation schools, upon which attendance has now in most places been made compulsory to the extent of from six to twelve hours per week, and up to the ages of sixteen, seventeen or even eighteen years. In the earlier development of public education in the United States it was often necessary for pupils to work at home a portion of the year, thus leaving but a limited portion of time for attendance at school. This may be regarded as an unorganized and primitive form of part-time education.

Part-time education assumes in practice many forms as respects the distribution of the time of the learner. In some instances a portion of each day may be given to school attendance; in others, one or more half-days per week. Other plans of part-time education provide for alternate weeks in shop and school, while in a few cases the periods of alternation may be longer. In the minor engineering callings in England periods of alternation between practical work and school attendance range from three months to one year. In one type of German technical school, school attendance follows at least two years of practical work under apprenticeship. Various programs of part-time education possible under conditions in Massachusetts are discussed in Appendix F.

### III. THE NEED OF PART-TIME SCHOOLING.

It is estimated that there were in 1910 74,700 children in Massachusetts between the ages of fourteen and seventeen who were not in school. It is estimated that 40,000 of those who were not in school were regularly employed. Of the 40,000 young people between fourteen and seventeen years of age who were reported as at work, the textile industry employed 17,306 or 43 per cent. Boot and shoe factories took the second largest number, 5,003, while in the metal trades were found 2,042. The confectionery industry employed 904, and printing and publishing 768.<sup>1</sup> Of the total number of these young workers it appears that 71 per cent. began work at or about fourteen years

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<sup>1</sup> Complete census returns for 1909 are not given on printing and publishing.

of age. Taking the industries separately, 69 per cent. of the candy workers began work not later than fourteen. Of the young shoe workers, 56 per cent. started work at fourteen, while 79 per cent. of the textile group began at the same age.

A large proportion of the 40,000 who are at work lose considerable time through shifting. For example, in the study of textile workers in Fall River and New Bedford (see Appendix C), 9.4 per cent. of the boys and 33.9 per cent. of the girls have lost from several months to a year, while 3.2 per cent. of the boys and 13 per cent. of the girls who have not married have lost from one to four years. The evil effects of constant or periodic idleness during this formative part of life cannot be too strongly emphasized, and show the need of supervision of these young people during their first years at work. The work which they now do is monotonous, and because they cannot change from time to time to other kinds of work requiring a similar amount of skill, they lose their interest, and many leave only to loaf about. It was found in the study of Lowell boys, who seem to be typical (see Appendix C, II), that boys frequently leave one mill and go to another to do the same kind of work simply to secure a change in surroundings when they cannot change their work.

The education which has been received by those who go to work between fourteen and seventeen years of age is often poor. Only one sixth of the children investigated by the Douglas commission in 1906 <sup>1</sup> had completed the grammar grades. In the present investigation it was found that the largest number, 21.4 per cent. of the total leave at the seventh grade, and 43.6 per cent. leave the grades below the seventh, while only 3.9 per cent. have gone beyond the grammar school. The data presented in Appendix C seems to show that 10.4 per cent. of those entering the confectionery industry left at the fourth grade, while 35.3 per cent. of the young workers in cotton mills left at the fourth or fifth grades. More than three fourths, 76.3 per cent., of the textile workers studied left school before entering the eighth grade, and only 1.6 per cent. went beyond the grammar school. The shoe workers stand best in education. Forty-

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<sup>1</sup> Report of Commission on Industrial and Technical Education, p. 85.

seven and two-tenths per cent. of those studied left at the eighth or ninth grades, and 8.3 per cent. went beyond the grammar school.<sup>1</sup>

It is generally conceded that industry as at present organized is not able satisfactorily to educate its young workers. Employers find that their workers are poorly equipped in general knowledge, and lack specific training. Some employers assert that they are reorganizing their business so that it will be necessary to employ fewer young workers; but a comparison of total numbers employed in the various industries in 1904 with the numbers found in 1909 shows a decided increase in the later year.<sup>2</sup> This may mean that the less efficient factories are employing larger numbers of young people. While employers complain of having to employ poorly equipped workers, there is much to be said, from the young worker's standpoint, as to the prevailing lack of opportunity to advance in industry. Judging from the study of 1,875 young workers made for this report there seem to exist few opportunities to progress from job to job which would make for advancement in vocational power. Frequently the first and last jobs are identical in character, showing that while there may have been at times an advance there is a decline later.<sup>3</sup> In the studies of Fall River and New Bedford workers (see Appendix C, p. 53), cases were found in which there had been advances for the first two or three years, both in occupation and wage, followed by a decline, due to a lack of physical strength. In addition, there seems to be considerable shifting from place to place and from job to job. Many of the workers who were interviewed had shifted several times. This was true even of some of those who had been working only a year. There can be little if any educational value derived from a year's work if that has been spent in several factories.

Many of the workers interviewed claimed that they had great difficulty in learning a process requiring skill. Because in three or four years they had been able to increase their wages but slightly, and could see little opportunity ahead, many give up work in factories for anything else which they can find. Part-

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<sup>1</sup> See Table IV, Appendix C, p. 47.

<sup>2</sup> See Appendix C, II, p. 55.

<sup>3</sup> See Table I, Appendix A, p. 33.

time schools should aim to prepare such persons for this period of transition, and to pave the way to better industrial opportunities.

Long hours of monotonous employment, and the fact that under present conditions workers are being restricted to the operation of one or a few machines, with little opportunity to gain a general knowledge of the trade or business, make it imperative that part-time schools be established to give to young workers a broader knowledge of the industry than they are now able to secure. Under the present industrial system there is a dearth of capable foremen and superintendents, due to the lack of opportunity to obtain a general knowledge of the industry, a situation which should be met by part-time schools.

In comparing the records of children who have been at work one year with those who have worked six years, we get much enlightenment as to the amount of progress made by the two groups. In the textile industry, which employs the largest number of young people (see Appendix C, p. 73), we find that more advance is made proportionately in one year than in six. In the matter of wages, only 32.5 per cent. of those who have been at work six years have increased their earnings by amounts of from \$4 to \$6, while 20 per cent. of those who have worked only one year have had the same increase. Nineteen of those who had been working six years were still earning only the amount of their initial wage. Only one of the older group had increased his earnings more than \$9 in six years, while two of the younger group had done this in one year. This situation would seem to indicate that those who have been at work six years have made very little progress over the group at work but one year. If this is a normal condition in certain industries, then part-time schools might give training which will enable these workers to get into other industries which offer better prospects.

All-day vocational schools can render much service in bridging the gap between the regular and part-time schools by discovering the type and character of work which can be given in part-time schools, and by serving as training centers for teachers of part-time and evening schools.<sup>1</sup> The principal reason why these schools have as yet failed to reach larger num-

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<sup>1</sup> See Appendix B, p. 37.

bers is that when children have actually left school and started to work it is difficult to induce them or their parents to give up the full wage which is being earned.

While the all-day vocational school can do much, it cannot entirely meet the need for industrial training. The majority of young workers need experience to convince them of the need and value of vocational training. Seventy per cent. of the young workers interviewed were found to favor part-time schools, and their industrial experience was probably responsible for this attitude. They had worked long enough to begin to realize their deficiencies in education, and to know the value of training along industrial lines. These workers could have steadier employment if they had sufficient industrial knowledge to enable them to shift from machine to machine, from department to department, and, in the case of seasonal trades, from one trade to another.

Evening schools do not solve the problem as regards young workers under seventeen years of age, as the majority of them are too tired to attend, even where technical courses are offered. Experience shows that while many may register in evening schools a large proportion fail to attend throughout the term. To delay the training of these young workers who leave school at fourteen to a time when only a few may realize the need of instruction and attend an evening school must result in a distinct loss. Evening attendance is, on the whole, a test of the energy, ambition and vigor of the wage earner to which many cannot conform. The rush home at the end of a long day's work, the hurried meal, and the long journey to school centers are handicaps which it is difficult to overcome. Large numbers who are undoubtedly worth educating do not, when they reach maturity, attend an evening school, while of those who do many have been out of school for so many years that they have practically forgotten much of what they learned before leaving. Many young people would probably be glad to avail themselves of the opportunity to receive part-time instruction if it were offered immediately upon their leaving the elementary schools, but after a lapse of years in industry it will be difficult to induce them to take such training.

#### IV. PRACTICABILITY OF ESTABLISHING A SYSTEM OF APPRENTICESHIP.

In recent years, methods of manufacturing have undergone such radical changes that the older system of apprenticeship is, in the great majority of cases, no longer adapted to industry; and any substitute offered must be based on a realization of the fact that young people are no longer assistants to skilled workers who practice the whole craft, but are rather independent units in the productive process.<sup>1</sup> So far, little has been done to adjust the methods of industrial training to these new conditions. Even Germany does not show us adequately how this can be done, for the part-time or continuation school work for apprentices there is mainly for those employed in the hand-work trades. Young persons employed in the factories are classed with messengers and others who render miscellaneous service, and only general training is provided for them.<sup>2</sup> Massachusetts must, then, develop its own system of vocational training to fit the new conditions. It seems apparent that through a co-operative plan of part-time schooling we can provide not only necessary liberal training, but also a substitute for apprenticeship which will meet new conditions.

#### V. THE PRACTICABILITY OF PART-TIME SCHOOLING.

The practicability of part-time training must be considered from at least three points of view: first, from that of the worker, his needs and economic condition; second, from that of school instruction, especially with respect to the possibility of so organizing courses that effective teaching can be done; and third, from that of the employing industry, with particular reference to the need of such instruction for the future welfare of the industry and also as to the possibility of its being so conducted that a portion of the workers' time during the day can be devoted to school instruction.

1. *Practicability from the Standpoint of the Worker.* — Investigation of the economic condition of workers fourteen to

<sup>1</sup> See appendix on "Apprenticeship," p. 84.

<sup>2</sup> From special reports made by American consular service for this investigation. Not yet published.



seventeen years of age warrants the estimate that over 65 per cent. of these could in case of necessity give all their time to school, while approximately 35 per cent. apparently could not do so. Those who were able, as judged by their economic condition, to remain in school doubtless left in many cases either because they were not getting what they wanted or because they failed in what was expected of them. These youths are often of the type that learns by experience and by doing, and consequently they and their parents much preferred working to attending school of the prevailing type.

A full-time day vocational school might deal effectively with a large proportion of the first group; but much which can be taught in a day vocational school can also be given in part-time schools, with the advantage in favor of the greater reality of part-time instruction. For those whose economic condition compels them to earn wages, part-time schooling is the only practicable method of prolonging the opportunities for education. Many of these doubtless are not interested in further education, but there is no reason why these should not eventually be required to equip themselves properly for useful careers.

The inauguration of any extensive plan of part-time schooling would necessarily involve an adjustment of the wage scale proportionate to the amount of service rendered in industry. Some industries have a dull season which might in part be utilized for school attendance. Department stores often have a dull period during the day when time could perhaps be given to the school without a loss of pay. There is evidence to show that in work requiring much thought and reasoning power, the time taken for instruction of the right kind soon brings increased earnings to the worker and a greater profit to the employer. There are many workers who are so anxious to improve their condition that when approached on the subject they have stated that they would give up Saturday afternoons, their only free time, for purposes of instruction. In the city of Lowell, the only place which has yet offered the opportunity for this, 165 have already demonstrated that they are in earnest in this matter.

2. *From the standpoint of school organization* part-time schooling, whether vocational or otherwise, is practicable. Suc-

cessful part-time instruction has already been given to groups selected from different industries,<sup>1</sup> in Massachusetts and in other States. The part-time instruction has been designed for selected groups in these cases, which do not represent the whole number of young people employed in any one establishment; but there appears to be no reason why vocational and other schools cannot be so organized that equally good work can be done with all others employed in these industries, provided time is given to admit of the training of teachers and directors and the development of suitable courses of study.

With a minimum of time, for example eight hours per week of school work, it would be possible to do no more than remove elementary school deficiencies, while giving some general training in citizenship and in such technical subjects as drawing, design and industrial calculations. In the case of many girls engaged in occupations requiring little or no technical knowledge, instruction might consist largely of training in the household arts. To give any adequate training in the technique of the trade in which the worker is employed not less than eight or ten hours per week for a period of three or four years would be required. Young people employed in juvenile or temporary work ought to be trained towards adult service in some other industry or trade. To make it practicable to do this, about one half of their working time should be taken. This may be done by devoting a half of each day, every other day, or every other week, to school work.

3. *From the standpoint of the organization of industry* it appears to be generally practicable to arrange the work being done by young people so that a part of their working time can be taken to attend school. As is pointed out on page 104, part-time courses of thirteen different kinds now exist; and arrangements have just been completed for instruction along eleven<sup>2</sup> additional lines. In most cases the initiative in organizing these courses has been taken by manufacturers themselves, some of them starting classes in their own factories and later turning

<sup>1</sup> Candy making, printing, salesmanship for department stores and other mercantile establishments, office work, pattern making, machine work, draughting, iron moulding, tinsmithing saw making, bricklaying, carpentry, textiles. See Appendix E, p. 104.

<sup>2</sup> Electrical work, shipwrighting, ship fitting, ship caulking, cabinet making, plumbing, blacksmithing, coppersmithing, steam fitting, boiler making and riveting, sheet-iron working. See Appendix E, p. 106.

them over to the public schools. In the case of department stores the work was started by a private agency which, when it reached the limit of its available resources, was able to transfer its work to the stores, which added the cost to overhead expenses and conducted the classes themselves. In some lines of employment, such as that of department stores, candy making, and boot and shoe manufacturing, at least a portion of the time devoted to school work can be taken during a dull season of the year or a dull part of the day, but in any large plan which will provide for the training of every boy and girl some means must be found of filling the places of most of those who are for the time attending school. In some lines of business this can be accomplished by having two people trained to do the same work. In certain parts of England the textile business has been so organized for years that young workers are paired at assigned tasks, one working in the morning, the other in the afternoon, and each attending school the portion of the day when not employed. In America machine shops, foundries, printing establishments, and to some extent the textile industries, provide for a plan whereby alternating weeks are given by young workers to shop and to school. Two boys are employed on the same job, one working in the shop one week while his partner attends school. The next week they exchange places. In this way production in the factory or shop is not interrupted, the student gains valuable practical experience upon which to build during the week in school, and the teacher can use this practical experience as a basis of training. In this State and elsewhere certain machine shop, printing, and confectionery establishments are already sending selected groups to school for periods of from four to six hours in length during one working day of each week. In many instances this is being done during a dull period of the day, when the services of the absentees can be spared with a minimum of inconvenience. To organize this plan on a scale permitting each young employee to have a half day a week of instruction would necessitate the employment of a force from one twelfth to one eleventh larger in each case. If more time were devoted to school work, a force larger in proportion to the amount of time given to the school would be required. In many factories to-day such an extra force is maintained

to fill the places of those who are out for sickness or any other cause. This would be merely an extension of the same system.

Any system of part-time instruction made compulsory at the present time, with the slight knowledge on the part of employers as to how they might organize their business in harmony with it, would probably lead to a reduction in the number of their young employees; perhaps, in some cases, to their ceasing to employ children altogether. In the case of textile work, where some employers might abandon the employment of children altogether, others would probably find it profitable to engage those discharged by their competitors. The net result, however, could hardly fail to be to throw out of work large numbers of children who need the wage, and whom the schools are not prepared to handle efficiently.

Employers who have thought about the problem at all not only feel that something ought to be done, but they are ready to co-operate as soon as the opportunity is presented. They confess their inability to give the time and thought necessary to work out a solution themselves, but await the submission of practical plans. Not a few are asking to have the problem studied as it relates to their own business, with the hope of receiving practical suggestions. Employers in Massachusetts are generally interested in the happiness, welfare and efficiency of their employees. They are ready for the formulation and promotion of practical plans of co-operation between the school and the employer in the interests of both our children and our industries, and there is abundant reason to believe that it is possible to carry out, on a basis of voluntary co-operation, as extensive plans for part-time schooling as the State is prepared to handle efficiently. (See Appendix F, p. 124.)

## VI. EXISTING MEANS WHICH MIGHT BE MADE TO FURNISH VOCATIONAL TRAINING.

In 1906 the Douglas commission called attention in a forceful way to the educational and industrial condition of boys and girls between the ages of fourteen and sixteen years, and recommended a new type of school to meet their needs. These schools have been established in an experimental way in

a few communities, but they should be extended, developed and made the agency to work out courses of study, to develop teachers and methods of teaching, and to put into operation co-operative plans of part-time schooling as a substitute for the old system of apprenticeship.<sup>1</sup>

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## VII. SUGGESTED PROGRAMS.

It is recommended that the programs of part-time training offered provide for both liberal and vocational training. If only four or five hours per week are devoted to the school, the training offered should be primarily liberal, and aim to make the workers more intelligent industrial and civic units. When more than this amount of time can be given the training should be both liberal and vocational.<sup>2</sup>

## VIII. CONCLUSIONS.

As a result of the present inquiry into the needs of part-time education, the following conclusions have been reached:—

1. There is a distinct need for the further development of part-time education in Massachusetts, evidenced by the fact that upwards of 40,000 young persons from fourteen to seventeen years of age are constantly employed in wage-earning pursuits, most of whom have not completed an elementary education, and nearly all of whom have little or no opportunity for systematic vocational training toward occupations suitable to adults.

2. Part-time education as a means of giving more adequate liberal and vocational education to young people already employed is, in large measure at least, practicable, both from the standpoint of the employing industries and from the standpoint of the schools, as a means of efficient instruction for young persons.

3. The further development of part-time education in Massachusetts requires but little legislation additional to that now existing. There is need, however, for the further development of existing agencies for the conduct of vocational education,

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<sup>1</sup> See Appendix B, "Existing Systems of General and Vocational Education," p. 37.

<sup>2</sup> See Appendix F, p. 124.

and also for the elaboration and testing of practicable plans for part-time training.

4. Existing agencies of vocational education, including evening schools, while effective within the limits of their present development, reach as yet comparatively few of the young people of the Commonwealth.

5. There is no evidence that systems of apprenticeship of the character once common in the trades can be revived and employed as a means of meeting the need of vocational education for young people from fourteen to seventeen years of age.

6. The historic policy of Massachusetts as regards education has been, first, to make the offering of an educational opportunity permissive on the part of the community; second, to make mandatory the offering of the opportunity; and third, to make it compulsory on the part of young persons to take advantage of the opportunity. The first step in this policy has already been taken, so far as vocational education is concerned, and thirty-five cities and towns have made very creditable beginnings in the work of offering opportunities along vocational lines. Most communities, however, do not yet offer such opportunities for vocational education. There is no evidence to show that a need for it does not exist; indeed, this investigation has shown that many young people might be reached in these cities which do not yet offer vocational education, and that much more might yet be done even in communities which are now maintaining such schools. The experience of the last four years in dealing with the problem, and the facts collected during this investigation, justify the conclusion that the general Massachusetts policy of moving forward by voluntary schemes of experimentation and investigation should be continued, with the ultimate view of further educating in some degree every boy and girl between the ages of fourteen and seventeen.

7. Legislation already enacted relative to vocational and part-time education has been sound. Chapter 471, Acts of 1911, is fully adequate for the further establishment of voluntary part-time courses, and for their supervision on an efficient basis. It is the belief of the Board that part-time schooling should be made compulsory throughout the State at some time in the future, when all children employed between the ages of fourteen



and seventeen might be required by law to attend part-time schools, at the rate of not less than eight hours weekly. When this is done these schools should offer courses of general training for citizenship, and, in the case of the girls' trades, where sufficient related and theoretical training cannot be given, training in the household arts should be substituted.

8. The further development of part-time education will require that the Board should employ at least one permanent agent for the promotion of this type of education. It should be this agent's duty to aid communities in the establishment of part-time courses. He should also collect such information as would be of value in planning courses of study for industries with reference to which sufficient information is not available.

9. Legislation should be enacted which will make suitable provision for the training of future vocational school teachers and directors, and for the professional improvement of those now in the service. To do this the State Board of Education should be empowered and directed to organize training classes. to which should be admitted persons with a sufficiently broad trade or industrial experience to enable them to become teachers of part-time or other vocational work.<sup>1</sup>

10. The interests of all forms of education require that existing laws regarding school attendance should be more effectively administered. Where these prove inadequate to meet the needs of part-time education, further educational legislation should be enacted.

## IX. RECOMMENDATIONS.

In obedience to the resolve, the Board of Education respectfully submits the following recommendations:—

I. Legislation should be enacted requiring the attendance upon some school of every child, not specifically exempted for satisfactory cause, between fourteen and sixteen years of age, who is not regularly employed; in addition to which, such changes in the present laws regarding compulsory education should be enacted as will enable school committees effectively to control and require the attendance at approved schools of boys and girls of such ages.

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<sup>1</sup> See Appendix F, "Programs for Training Teachers," p. 124.

II. Legislation should be enacted which will enable cities and towns, through their school committees, to require part-time school attendance of all boys and girls between fourteen and sixteen years of age who are regularly employed, at a rate of not less than four hours per week upon an approved school during the time when such schools are in session. Such attendance should be made between the hours of 7 A.M. and 6 P.M. of any working day or days.

III. The Board of Education recommends in addition to legislation providing for the compulsory attendance on school of all unemployed children under sixteen years of age, the passage of the following proposed act:—

AN ACT TO PROVIDE FOR THE ESTABLISHMENT AND MAINTENANCE OF  
CONTINUATION SCHOOLS AND COURSES OF INSTRUCTION FOR THE  
EDUCATION OF YOUNG PERSONS BETWEEN FOURTEEN AND SIXTEEN  
YEARS OF AGE WHO ARE REGULARLY EMPLOYED.

*Be it enacted, etc., as follows:*

SECTION 1. When the school committee of any town or city shall have established continuation schools or courses of instruction for the education of young persons between fourteen and sixteen years of age who are regularly employed in such city or town not less than six hours per day, said school committee may (with the consent of the board of education) require the attendance in such continuation schools or on such courses of instruction of every young person thereafter receiving an age and schooling certificate who is not otherwise receiving instruction approved by the school committee as equivalent to that provided in schools established under the provisions of this act. The required attendance provided for in this act shall be at the rate of not less than four hours per week, and shall be between the hours of eight o'clock in the morning and six o'clock in the afternoon of any working day or days. The time spent by a child in a continuation school or class shall be reckoned within the time or number of hours that minors are permitted by law to work.

SECTION 2. Continuation schools or courses of instruction, as provided in section one of this act, shall, so long as they are approved by the state board of education as to organization, control, location, equipment, courses of study, qualification of teachers, methods of instruction, conditions of admission, employment of pupils and expenditure of the money, constitute approved continuation schools or courses of instruction. Cities and towns maintaining such approved continuation schools or courses of instruction shall receive reimbursement from the commonwealth, as provided in section three of this act.

SECTION 3. The commonwealth, in order to aid in the maintenance

of approved continuation schools or courses, shall, as provided in this act, pay annually from the treasury to cities and towns maintaining such schools or courses an amount equal to one half the sum, to be known as the net maintenance sum. Such net maintenance sum shall consist of the total sum raised by local taxation and expended for the maintenance of such a school, less the amount for the same period of tuition claims paid or unpaid and receipts from the work of pupils or the sale of products.

SECTION 4. Any young person between fourteen and sixteen years of age who is regularly employed in a city or town other than that in which the said young person resides may attend a continuation school or courses of instruction, as provided in section one of this act, in the city or town in which such young person resides. Any young person attending a continuation school or courses of instruction, as hereinbefore described, in the city or town of such young person's residence in preference to attending such school or courses of instruction in the city or town of such young person's employment, shall file or cause to be filed regularly, and not less often than once a month, with the superintendent, or his representative duly authorized in writing, of the city or town in which such young person is employed, a report of attendance certified by the superintendent, or his representative duly authorized in writing, of the city or town in which such young person is attending school: *provided, however*, that the filing of such certified report of attendance with the superintendent of a city or town in which attendance on continuation schools or courses of instruction as defined in section one of this act is not compulsory shall not be required.

SECTION 5. The employer of any young person between fourteen and sixteen years of age who is compelled by the provisions and regulations either of the school committee in the city or town in which such young person resides or of the school committee in the city or town in which such young person is employed to attend a continuation school or courses of instruction as defined in section one of this act, shall cease forthwith to employ such young person when notified in writing by the superintendent, or his representative duly authorized in writing, having jurisdiction over such young person's school attendance, that such young person is not attending school in accordance with the compulsory attendance regulations as defined in section one of this act. Any employer who fails to comply with the provisions of this section shall be punished by a fine of not less than ten nor more than one hundred dollars for each offence.

SECTION 6. The superintendent of schools having jurisdiction, or a person authorized by him in writing, may revoke the age and schooling certificate of any child who is required by the provisions of this act to attend a continuation school or courses, if such child fails to attend such school or courses as provided by this act.

SECTION 7. This act shall take effect September first, nineteen hundred and thirteen.



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## APPENDICES.

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## PART II.

### APPENDICES.

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#### APPENDIX A.

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##### AIMS AND SCOPE OF THE INVESTIGATION.

The purpose of chapter 64 of the Resolves of 1911 is to find a practical solution of the problem of further educating the 40,000 young people between fourteen and seventeen years of age who are employed in Massachusetts. It is estimated that in addition to those at work there are 35,000 boys and girls of these ages who are not in school, and who are employed either intermittently or not at all. From the standpoint of the welfare of the State, the consideration of this group forms as important a problem in itself as does that of those who are regularly employed. The legislation of various countries is evidence of the fact that it is coming to be regarded as one of the duties of society to provide some form of continuation education for these young people. Several States in Germany, as well as other countries, have enacted laws which make a specified amount of school attendance up to the ages of seventeen or eighteen years compulsory.

Any practical working out of a program of part-time education, without considerable adjustment of industry, will require the employment of additional young people who would probably be drawn from two groups, a small number from those between fourteen and seventeen who are now in school, but a larger number from those who are neither in school nor at work. The State is thus confronted with the problem of ultimately educating all children up to seventeen years of age. This means that the school authorities must share in the responsibility of educating every child, not a selected few, and that the system of education must be made to meet not only the requirements of colleges and the professions, but the much more difficult requirements of citizenship, industry and business.

The Commonwealth of Massachusetts has for a great many years shown its interest in and desire to promote any form of education which will make for the intelligence, efficiency, prosperity and happiness of her citizens and the fullest and best development of her industries. The resolve authorizing the present investigation and report is but further evidence of the determination of the State that all

her young people shall receive an adequate training for citizenship and their life work.

Within the time allowed, and with the amount of money appropriated, it was not practicable to make a complete study of all the situations involved, and to submit recommendations as to practical programs of part-time schooling for the large number of young persons employed in connection with some 230 different industries in Massachusetts.<sup>1</sup> There have been no adequate means of presenting the entire problem in statistical detail. No records exist which give accurately the numbers that would be affected by possible legislation. There are no available records of the number of age and schooling certificates annually granted. Serviceable records of the number of children in school under fourteen years of age nor of those either in or out of school over fourteen are not available.<sup>2</sup> The accessible records of the Bureau of Statistics and of the district police regarding those employed are incomplete. From the beginning it was apparent that this report could not present the problem from the statistical standpoint as adequately as might be desired.

On the other hand, it also became apparent that exact statistical information as to many features was not needed. It is a matter of common information that large numbers of young people leave school at or about fourteen years of age; that many of these have not completed the elementary course of study; that they can be offered little or no systematic education in the industries in which they are employed; that there is a widespread demand in the industries for better trained workers; and that the employment of the large majority of young persons is intermittent and involves a considerable amount of shifting from one occupation to another. Hence, in the present study, chief consideration has been given to the following questions: (1) Is part-time schooling practicable in those industries employing children under seventeen years of age? (2) What methods of training can be adopted on a part-time basis to provide general and vocational instruction and thus benefit both the worker and the industry? (3) What are practicable programs to this end?

To put into operation a complete program of part-time schooling will add about 80,000 to the number now attending public schools, and will greatly complicate the problem of public education. If part-time schools are to be successful, the facts as to the children and industries in each community contemplating the establishment of such schools must be available, and the kind of training necessary for success in business and for the well-being of the individual should be understood. Above all, there must be developed a body of teachers competent to deal with the problem in such a way that the pupils will learn through the study of real things, not abstractions. Such a program of education

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<sup>1</sup> Classification of industries, Bureau of Statistics, report on Manufactures, 1909.

<sup>2</sup> Note on number between fourteen and seventeen years of age, Appendix A, p. 32.

means that the school must assume to a very great extent the responsibility for the welfare of young people while they are adjusting themselves to the problems of adult life.

For the details of such a program, comparatively little assistance can be derived from the experience of other countries. Germany has developed an extensive system of training for citizenship and industry, and it is believed that much of her prosperity has been due to her far-sighted policy in this direction. Examination will show, however, that the industrial and social conditions in Germany differ in marked degree from those found in the United States. The greater part of the vocational training developed in other countries is designed either to fit a selected few for leadership in highly organized industry, or to train for trades and industries which are still conducted largely on the basis of individual production. American industry is based on large scale, standard output, the use of remarkably ingenious machines and the ability of employers to utilize unskilled labor.

In the present study, special attention has been given to those industries of the Commonwealth which, as reported in the United States census, employ the largest number of young people. The metal trades were selected to represent a type of industry which requires considerable all-round skill, and one for which the schools have been successfully preparing in all-day, evening and part-time courses. These trades have a close connection with all others. They are found in some form in nearly every city and in many towns in the Commonwealth.

Cotton manufacturing, which is found in 144 of the 354 cities and towns of the State, was chosen to represent the textile industries because it is the largest of these and because it employs young workers in largest numbers. It is an industry for which it is commonly supposed that little special preparation can be given, and therefore it has not been touched by day vocational schools.

The manufacture of boots and shoes was selected because it employs the second largest number of children, and represents an industry which is more minutely subdivided and specialized than any other, having some 184 different operations. It is in part a highly skilled industry, and it is of the utmost importance that the industry be supplied with skilled and intelligent workmen.

The printing and publishing business was chosen because it is semi-mechanical, and because certain phases of it require more general education of the type offered in the regular public schools than is demanded by any other industry. It stands twelfth in rank as to number of young people employed.

Department stores were selected to represent the mercantile branch of industry, since, as a whole, including messenger and errand service, it is next to the textile industry in the number of young people it employs. Exceptionally successful preparatory work on a part-time basis is already being done in connection with department stores, and

it was deemed advisable to discover to what extent such work is capable of being adapted to other similar lines. Department stores present an educational problem in which girls are mainly concerned, and, as in the case of printing for boys, there is a close connection with regular school work, in that more general education of the type offered by the public schools is required than is necessary in most other branches of industry.

Candy making was selected because it is a type of industry which requires little skill, and the economic condition of the workers, due to the low wage, is so poor that a type of training should be offered which would increase the earning power of those employed. The time for this training should be so arranged that it would not be necessary to reduce the wages during the period of instruction. Although the actual number of young workers engaged in candy making is comparatively small, yet the percentage of young employees is larger than in any other industry.

Through the age and schooling certificates which have been granted in the several cities where investigations of young workers were made, it was possible to secure the names of persons who left school six years ago, together with the names of their parents and of their first employers.<sup>1</sup> The present addresses of these young workers were ascertained through city directories, and although a large proportion could not be traced, yet a sufficient number for the purposes of this study were found and interviewed in their homes with a view to finding out: (1) their previous school record; (2) what proportion had left the industry in which they began their industrial career; (3) what proportion had remained in that industry; (4) of what value the six years had been in securing experience in the industry and their prospects for future advancement.

In a similar way, boys and girls who had been out of school only one year were found and interviewed, to compare their experience with the experience of those who had been at work six years. Information was also collected for 2,462 mature workers in different trades, to ascertain the extent of their schooling, the time which it had taken to learn the occupation or trade followed, and the kind of experience which they had had in other occupations.<sup>2</sup>

Much time was spent in different manufacturing establishments for which the schools have previously given little training, to compare the kind of work done and the sort of skill required with the requirements in those industries and trades for which the schools have been successfully preparing. Manufacturers, superintendents, foremen and workmen were interviewed, to ascertain their attitude toward training for the business, the kind of training needed and whether or not it would be possible to organize the work so that part time could be taken for schooling. With but two exceptions, employers showed the utmost courtesy to the agents of the Board who conducted this investigation.

<sup>1</sup> See Appendix C, p. 44.

<sup>2</sup> See Appendix C, III, p. 62.

They gave unsparingly of their time during business hours, and they often gave whole evenings to conferences. In almost every case where it was requested the agents were given free access to their plants for days at a time, and were allowed to inspect books and copy records. This was more than could reasonably have been expected when it was not required by law, and without the personal help on the part of manufacturers, superintendents, foremen, labor union officials and others, this report would not have been possible, for it was found that information obtained by correspondence alone was practically worthless. Educators who have studied the problem abroad, who have organized work in this country and have had successful trade and general educational experience were consulted. Special agents were employed to give expert opinion on technical points and to collect information regarding boys and girls in their relation to industry. It was found that the Department of Research of the Women's Educational and Industrial Union of Boston had already started the study of women and girls in the shoe industry, and all the material which they had collected was made available for the purposes of this study.

The following method was used in making an estimate of the number of children between fourteen and seventeen years of age who are neither in school nor at work. The total number of children in Massachusetts between five and seventeen years of age is estimated at 712,000.<sup>1</sup> The total number of children in all elementary and secondary schools, both public and private, is 634,200.<sup>2</sup> This includes all the children in school except those in higher institutions of learning, both those under five and those over seventeen. There are really less than 634,200, then, in school between the ages of five and seventeen. Assuming, however, that this accurately represents the number, we find that there are 77,800 children between the ages of five and seventeen who are not in school. Of these, possibly 2 per cent. may be illegally employed under fourteen and another 2 per cent., through illness or other causes, may be at home. That is, there may be 3,100 under fourteen who are at home for one cause or another. That leaves 74,700 between fourteen and seventeen who are not in school. It is estimated that only 40,000<sup>3</sup> of these are at work; 34,700, then, are neither at work nor in school.

From the report of the State Board of Education for 1910, we find that there are in school 471,000 children between the ages of five and fifteen years. If we assume that there is an equal number of each age we should estimate the number between fourteen and fifteen as one tenth of the total, or 47,100. Certainly that is larger than the true number, for the number at the age of fourteen is much smaller than

<sup>1</sup> Total population from advance sheets, 1910 census of Massachusetts; 56 per cent. are under seventeen years of age. See page 559, 1905 census of Massachusetts.

<sup>2</sup> Report of United States Commissioner of Education, 1911.

<sup>3</sup> Factory inspector's report, 1911, gives 24,000. It is estimated that this is two thirds of whole number. Inspectors do not go to all factories, so 4,000 were added on this account.

the number at five years, on account of the death rate and on account of the fact that large numbers leave school at fourteen.

Now let us further assume that all these children between fourteen and fifteen are in the elementary schools. The number over fifteen in the elementary schools is a negligible proportion of the total. Consequently, these 47,000 children are many more than the total number between fourteen and seventeen in the elementary schools. From the report of the United States Commissioner of Education we find that there are 63,000 children in the secondary schools. Surely not more than three fourths of these, or 47,000, could be between fourteen and seventeen years of age. Then the total number in school between fourteen and seventeen years of age would be 94,000. Now the estimated number in Massachusetts between fourteen and seventeen years of age is 167,000. There are, then, 73,000 between fourteen and seventeen who are not in school. Forty thousand only are at work, which leaves 33,000 unaccounted for, the very lowest estimate of the number neither in school nor at work.

This statement is further borne out by a comparison of the returns of truant officers with the number of age and schooling certificates granted. In 1911-12 there were 1,053 age and schooling certificates granted to children of fourteen for mills in Fall River, for which we have the reports of truant officers. Now in these same mills the truant officers report only 547 children from fourteen to fifteen years of age at work. That can mean only one thing. There are nearly as many children of fourteen who intended to work, who are now neither in school nor at work, as there are children at work. It cannot be supposed that they have gone into other trades, for the cotton mills take 83 per cent. of all the young people at work in Fall River.

The question might be raised, "Were not a number of certificates granted for summer employment?" The mill men say that there is very little if any summer employment on account of the excessive heat, and of the 300 young people visited who had taken out age and schooling certificates not one had taken it out for summer employment. Furthermore, the fact that 54 per cent. take out age and schooling certificates before they are one month over fourteen does not indicate a large amount of summer employment.

TABLE I. — *Showing manufacturing occupations in Massachusetts employing over 100 children under seventeen. Comparison of years 1904-09.*

Estimated from Massachusetts Census, 1905, Vol. II., and United States Census, advance sheet on manufacturing.

OCCUPATIONS.	ESTIMATED NUMBER OF CHILDREN UNDER SEVENTEEN.			PER CENT. CHILDREN ARE OF THE TOTAL NUMBER EMPLOYED IN EACH INDUSTRY.		
	Male.	Fem- ale.	Total.	Male.	Fem- ale.	Total.
Cotton mills, { 1904, . . . . .	3,699	4,191	7,890	8.2	9.5	8.8
{ 1909, . . . . .	4,652	4,869	9,521	8.2	10.1	9.1
Woolen and worsted (including also felt { 1904,	1,463	1,685	3,148	6.1	9.5	7.4
goods and wool hats).                 { 1909,	2,130	2,762	4,892	6.8	12.9	9.2
Boots and shoes (including cut stock and { 1904,	1,239	950	2,189	2.2	4.5	3.0
findings).                                 { 1909,	2,939	2,064	5,003	5.1	7.4	5.6
Iron and steel, 1904, . . . . .	386	42	428	1.8	6.6	1.9
Foundry and machine shop, 1909, . . . .	875	60	935	1.8	8.1	1.9
Confectionery, { 1904, . . . . .	23	317	340	2.4	20.6	13.6
{ 1909, . . . . .	63	866	934	4.0	20.9	14.5
Hemp, jute and flax, linen, rope and cordage, 1904,	182	340	522	7.4	12.5	10.1
Cordage and twine, jute and linen, 1909, . .	399	438	837	11.4	15.3	12.1
Printers, lithographers and pressmen, 1904, . .	120	50	170	1.3	2.3	1.5
Printing and publishing, 1909, . . . . .	606	162	768	4.7	3.3	4.2
Silkmill operatives, 1904, . . . . .	86	236	340	8.5	10.8	10.1
Silk and silk goods, including throwsters, 1909, .	152	554	706	11.8	21.2	16.2
Hosiery and knitting mill operatives, 1904, . .	83	351	434	6.1	7.3	7.0
Hosiery and knit goods, 1909, . . . . .	192	489	681	4.5	8.8	6.6
Carpet factory, 1904, . . . . .	224	156	380	11.4	8.3	9.9
Carpets and rugs, other than rag, 1909, . . .	320	230	550	10.1	9.0	9.1
Box-makers, paper, 1904, . . . . .	50	272	322	6.1	7.2	7.0
Boxes, fancy and paper, 1909, . . . . .	63	365	428	4.8	13.9	10.1
Paper goods not elsewhere specified, 1909, . .	117	288	405	4.3	11.4	7.4
Paper and wood pulp, { 1904, . . . . .	134	225	359	1.9	3.7	2.7
{ 1909, . . . . .	33	165	198	.4	3.7	1.5
Jewelry, { 1904, . . . . .	146	137	283	3.2	6.7	4.2
{ 1909, . . . . .	174	140	314	3.4	4.9	3.8
Tool and cutlery, { 1904, . . . . .	98	23	121	2.1	10.1	2.5
{ 1909, . . . . .	234	45	279	3.8	4.0	3.9
Rubber factory operatives, 1904, . . . . .	146	200	346	2.8	4.8	3.6
Rubber boots and shoes, 1909, . . . . .	198	78	276	4.5	2.7	3.7





TABLE II. — Showing number of adults and minors employed according to the Census of Massachusetts, 1905, and the number of children at work as found in truant officers' reports, as compared with the number of age and schooling certificates issued in 1912.

CITY.	Total number over 16 em- ployed in manufactures.	Census 1905, Vol. I, children 10 to 15 years at work.	Census 1905, Vol. III, children under 16 at work.	NUMBER OF ESTABLISHMENTS REPORTING.			TRUANT OFFICERS' REPORTS AND AGE AND SCHOOLING CERTIFICATES.										TOTAL NUMBER OF CHILDREN 14 TO 16 YEARS OF AGE.	
				With minors.	Without minors.	Census 1905, Vol. III, total number of es- tablishments.	CHILDREN 14 YEARS OF AGE.		CHILDREN 15 YEARS OF AGE.		CHILDREN 16 YEARS OF AGE.		CHILDREN 17 YEARS OF AGE.					
							Truant officers' returns.	Age and school- ing certificates.	Truant officers' returns.	Age and school- ing certificates.	Truant officers' returns.	Age and school- ing certificates.	Truant officers' returns.	Age and school- ing certificates.	Truant officers' returns.	Age and school- ing certificates.	Truant officers' returns.	Estimated from age and school- ing certificates.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Holyoke, . . . . .	13,981	703	1,067	39	0	179	338	651	543	185	559	-	-	-	1,440	1,901		
Lynn, . . . . .	22,844	447	275	43	6	179	33	492	90	287	126	4	55	-	269	2,054		
Chelsea, . . . . .	6,480	227	161	21	22	130	28	-	99	-	165	-	63	-	292	-		
Haverhill, . . . . .	10,292	163	80	50	16	320	31	-	112	-	147	-	86	-	298	-		
Worcester, . . . . .	26,214	896	2,582	75	-	470	169	-	284	-	412	-	120	-	1,590	-		
Fall River, . . . . .	31,131	1,994	1,241	55	-	234	601	1,835	986	210	930	2	260	-	2,951	5,927		
New Bedford, . . . . .	20,818	1,196	954	35	-	176	491	1,007	787	172	414	-	317	-	2,271	5,927		
Lawrence, . . . . .	22,281	1,162	1,172	14	-	187	743	-	933	-	764	-	150	-	2,681	-		

A comparison of the figures found in columns 2 and 3, taken from the State census for 1905, shows that in the cities of Lynn, Chelsea, Haverhill, Fall River and New Bedford there are fewer children at work under sixteen years of age than there are at work under fifteen years of age, which is, of course, impossible, as the figures under sixteen must include those fifteen and under. A comparison of the figures found in columns 7, 8, 9 and 10 for the cities of Holyoke, Lynn, Fall River and New Bedford seems to show that there are many less children at work than there are children who are holding age and schooling certificates. In the case of Holyoke, only about half as many are found at work as there are holding age and schooling certificates, of the group fourteen years old; in Fall River, one-third as many; and in New Bedford, half as many. In the city of Holyoke, the truant officer's returns are considered absolutely accurate and reliable, as the officer personally visited all the establishments noted in the records as employing young people leaving school at fourteen.

## APPENDIX B.

## EXISTING MEANS FOR FURNISHING GENERAL AND VOCATIONAL EDUCATION IN THE COMMONWEALTH.

## 1. THE PUBLIC SCHOOL THE AGENCY FOR FURNISHING GENERAL TRAINING.

We turn naturally to the regular public school for the solution of every new problem of education that concerns the education of children and youths. Why should not the regular public school undertake the solution of this problem of vocational training? In the established public school system we have ready to hand an extensive and expensive plant, an effective organization, and a body of trained, experienced instructors. Do not economy and efficiency demand that the provision of necessary vocational training be committed to our existing plant and organization, to our picked body of instructors, enlarged and increased in numbers of course, to meet the larger task imposed?

Experience now proves that the regular public schools cannot provide requisite and adequate vocational training, however feasible and desirable this may, at first thought, appear. The public school cannot do this successfully for two reasons: first, because the public school has measurably failed, in giving efficient general education to many of the very boys and girls whom it is now proposed that the school train vocationally; and second, because it would be practically impossible to adapt the existing school organization and body of instructors to the requirements of the new problem.

The statement of the obvious fact that the existing public school has failed to give the most effective education to boys and girls in immediate and most urgent need of vocational training must not be construed as equivalent to an assertion that the public school as an institution is a failure. On the contrary, the universal and overwhelming evidence of the positive achievements of the public school, no less obvious than its failures, entitles it to rank as the most effective institution of enlightenment and civilization yet established. The existing public school was not intended to provide vocational training in the sense in which such training is now rightly demanded. The typical school plant has always been designed, the organization worked out, the teaching force selected, for the purpose of providing literary and general training. This purpose the public school fulfills, on the whole,

with success, even in the case of those boys and girls who go out incompletely educated, — at least from the standpoint of vocational training; for, when due consideration is given to the handicaps of various kinds and degrees under which the school has labored, it must be acknowledged that the school has done well what it undertook to do.

Why cannot the regular school be adapted to meet this new problem, and, indeed, at least partially to anticipate it, through modified studies and methods of instruction introduced before the pupils who are to need vocational training reach fourteen years of age? Theoretically, this is possible. Indeed, the early anticipation of the needs of that type of boy or girl who enters the industries as soon as the law allows may well be taken as one of the practical ideals toward which the regular school should strive. But the problem immediately before us, — a problem that is not likely to be materially changed for many years, however successfully the regular school may modify its present work for that type of pupil under consideration, — the problem of giving definite and immediately efficient vocational training to boys and girls of fourteen, is radically different from the problem that the regular school is solving; it demands new and quite different organization, equipment, subject-matter and methods of instruction, and, most of all, types of instructors. To compel the regular public school to undertake the solution of this new problem would be greatly to impair its efficiency in the kind of work that it has long carried on.

But an organization, plant and equipment especially designed to serve in vocational education, and a corps of instructors especially chosen with a view to administer such training, will in time react most favorably on the regular public school, and each type of education will reinforce the other.

## 2. THE DEVELOPMENT AND PLACE OF THE VOCATIONAL SCHOOL.

The report of the Douglas commission made in 1906, called attention in a forceful way to the fact that there was a great army of boys and girls between the ages of fourteen and sixteen, over 25,000 in number,<sup>1</sup> employed in the industries who had gone out from the public schools unprepared for their work, and whose need of further training had been entirely ignored by our educational system. Massachusetts then for the first time manifested in an official way an interest in the practical education of the adolescent for wage earning. Local communities were encouraged to establish vocational schools by the passage of a State law providing that where cities or towns furnish the building and equipment for such schools the State will bear one half the expense of maintenance. The law, with subsequent amendments, is still the same in spirit, and under its provisions 35 different cities and

<sup>1</sup> The Douglas commission investigated the condition of workers between fourteen and sixteen years of age; this investigation has dealt with those between fourteen and seventeen years of age.

towns have established some form of State-aided vocational school. Eleven have all-day schools, giving nine different lines of training for boys and four for girls; 3 have part-time schools; and 35 have evening courses.

These schools must be regarded as way marks or milestones along the road by which the Commonwealth hopes finally to reach the goal of effective training for all boys and girls who go out to work at the age of fourteen. They have already contributed much to the solution of the problem of adjusting our education to new conditions in that they have demonstrated the value of vocational education, and have established beyond question the possibility of giving in a school training which is of value to the worker in the shop. They have, however, dealt with less than 1,500 in day schools, less than 300<sup>1</sup> in part-time schools and only 6,000 in evening courses. The failure of the day school to enroll large numbers of pupils can be attributed to at least three causes. Usually when parents are first approached on the subject their attitude toward sending their children to such a school is favorable, and they honestly intend to do so, but when the children have actually left school and are already at work, it is found to be next to impossible to induce them or their parents to forego the full wage for the sake of a training whose value has yet to be proven to them. The lack of co-operation between the regular public and the vocational schools has kept many of those who have not yet left the regular school in ignorance of the existence of an institution which provides vocational training. To this same lack of co-operation and sympathy is due the fact that not infrequently the knowledge of such a school is brought to the attention of pupils in the form of a threat that they will be sent to it as they would to a corrective institution. In many cases these schools are lacking in facilities to care for all who apply for admission.

The largest contribution which the vocational school has made in helping to solve this problem is in developing methods of teaching the type of boy and girl under consideration. It has demonstrated that the children who do not remain in the regular schools are capable of being educated, and that it is possible to organize and conduct classes in such a way that those with a practical turn of mind can be taught the same things which they fail to grasp in the regular schools. While the common problem of all teaching, that of exciting the interest of the pupil and impressing upon him the value of right training, is ever present in this new form of school, the teachers have not been hampered by the traditions of generations, and have been able to use the pupil's daily experience in the home, in the shop, on the farm or on the street as a basis for teaching, and to illustrate the common every-day problems of life.

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<sup>1</sup> This number includes 131 boys in the Fitchburg part-time school who are of high-school grade.

To do this successfully, a new type of teacher is absolutely essential.<sup>1</sup> While these schools have been established barely three years, they have accomplished something in the line of contribution to the problem of developing the type of teachers and directors needed. In future, directors or principals of vocational schools should be selected partly because of their ability to train and develop teachers, and each person taken to train should be chosen with the thought in mind that he will, perhaps, ultimately become a principal or director. To a very great extent the all-day vocational school must continue to serve as a training center, not only for its own teachers, but for teachers in other schools as yet not established, and for teachers of part-time and evening courses, particularly the former. Evening classes deal with the more mature men and women, but the work developed in them has made a very important contribution to the solution of the problem under discussion.

Starting work in a new line or industry with men and women in evening classes has been found very much easier because they are already employed, and need the supplementary instruction which will aid them in taking the next step forward in their work. In giving this instruction we learn what should be taught, and frequently discover men and women in the trade who are respected by their fellows for their greater knowledge of the business, and who are often capable of being trained for teaching in day schools.

It has been apparent from the beginning of this study that the conditions shown to be true by the Douglas commission have remained practically unchanged in the last six years. This commission believed that the regular day schools could not deal with the situation, and suggested the organization of vocational schools, with the hope that they would remedy the difficulty. The experience of Massachusetts shows that the all-day vocational school reaches as yet but a small percentage of the children who drop out of the public school at fourteen years of age. It is clear that a system of training which is to reach 40,000 or more boys and girls must allow many of them to work and to attend school at the same time.

By those engaged in the work, the value of these schools has been measured largely on the basis of the contribution which they are making toward the solution of this problem which the State has been moving toward and must ultimately reach. The belief that part-time schooling is to be the means whereby most of this needed training shall be given, and that the time is ripe for a more vigorous effort to secure it, led to the passage of the resolve calling for this report, the greatest aim and hope of which is to reëmphasize the need of reaching the wage earner through schools operated in co-operation with industry, and to point out some practical ways and means which seem to promise the greatest results in this effort.

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<sup>1</sup> See Appendix E, p. 99.

### 3. OTHER EXISTING AGENCIES FOR FURNISHING VOCATIONAL EDUCATION.

The other existing agencies which furnish vocational training reach less than 500 of the group at which this study has been primarily directed. These institutions may be divided into the five following classes: profit-making institutions, apprenticeship, corporation schools, philanthropic or semipublic schools and public vocational schools.

1. Schools which are operated for profit, such as correspondence and private trade schools, register not less than 4,500 whose average age is above twenty-three.<sup>1</sup>

2. Apprenticeship is not now an efficient agency of vocational education, but as is pointed out under a discussion of apprenticeship on pages 84 to 87, Appendix D, it can probably be reorganized, at least in certain industries, and made to contribute its share to the solution of the problem of vocational education.

3. Corporation schools are few in number. There are but two schools of this class in Massachusetts, and they reach about one half of one per cent. of those employed under seventeen years of age. While these schools fill a need in large manufacturing plants, they are not capable of extension for the purposes of public instruction. The two schools which exist take very few under fifteen years of age, almost one half of their pupils being over seventeen years of age. Of a total of 427 attending, only 35 are from fourteen to fifteen, 91 from fifteen to sixteen and 101 from sixteen to seventeen, while 200 are over seventeen years of age.

4. Philanthropic or semipublic schools giving instruction at cost or less than cost are training 270 persons for entrance to industry in full-time day schools, and in evening courses, 2,652, or less than one half of one per cent. of the total group of 585,559 adult workers in Massachusetts. Such institutions are not capable of being developed to reach more than a few at the best, but they should continue to deal with the particular group which is now attending them. With the exception, perhaps, of the work in salesmanship, started in 1906 by the Women's Educational and Industrial Union, it is doubtful if there is any work being conducted in these schools with which the public vocational schools are not prepared to deal. The methods developed in the Women's Educational and Industrial Union School for salesmanship can be adapted to the regular public schools, and this institution can teach us much which is of value in making instruction efficient. The principles developed along the line of selling can be extended to the other departments of the store and to mercantile business in general. This phase of the problem is dealt with in detail in Appendix J.

5. Three textile schools which are partly supported by the State and are free public vocational schools, with day, evening and part-time

<sup>1</sup> With the exception of the private trade schools in relation to the shoe industry, these schools were not studied in detail. See Appendix D, p. 87.

courses, reach mainly adult workers. The day courses in the textile schools are designed to be of college grade. They have varying conditions for entrance, but the chief requirement is high-school graduation. The larger part of the work of these schools, however, is done through evening courses, in which instruction was given to 2,386 adult workers for the textile business in 1911-12. In New Bedford and Fall River the plants might be made available also for all-day and part-time courses for boys and girls who are obliged to enter industry at the age of fourteen, no matter what grade they may have completed before leaving the elementary school.

Through evening instruction the vocational schools reach 5,057 adult workers, or less than one per cent. of all those employed in the State; 1,265 are being prepared in all-day courses for entrance to industry, and only 263 of the 40,000 who have already entered industry are receiving part-time instruction. Thus the larger part of the work done by existing public and semipublic institutions is in the instruction of mature workers in evening classes. It has been found that night schools cannot teach young people under seventeen or eighteen years of age, especially if they are in classes with older workers, without detriment to the instruction of both groups and an undue physical strain in the case of the younger workers. These classes should be continued for the older workers whom they are intended to serve, and should be developed in the cities and towns where they are now established and extended to those communities where they have not been started.

The two remaining agencies, the all-day vocational school and the part-time school, are the smallest, both from the standpoint of the number of schools and the number of pupils, but they offer the largest hope for the solution of the problem. Four years of experience have shown that the all-day vocational school, taking pupils after the compulsory age, can at best reach only a small portion of the young people before they enter industry. The Douglas commission believed that if these schools were established, 80 per cent. of the children leaving school and going to work would profit by their instruction. Four years of experience seem to show that they can add less than 10 per cent. to the group which can be reached on an all-day basis. The all-day schools have been established in only 11 of the 354 cities and towns in the State, but they have demonstrated wherever they have been established that they can hold children who would otherwise leave school, that these children can be educated, that they are worth educating, though the other public schools have failed to reach them, and that they can give a training which enables their students to secure a more favorable entrance into trade and industry. There is no evidence to show that the other 343 cities and towns which have not established these schools do not in many cases also need them to meet the requirements of their children and their industries; in fact, evidence enough has been collected during this investigation to show that they are



needed in every city studied where they do not now exist. It is firmly believed that these schools must be made the basis for dealing with the whole group not reached by the regular public schools. Each should form the nucleus of an institution to be so organized that it will give all kinds of needed instruction, whether part-time day, full-time day or evening school training to any individual in any trade or occupation.<sup>1</sup> The day vocational school should be founded first to deal with the smaller selected group, to develop courses of study and methods of instruction, and to train teachers and directors. It should establish itself firmly in the community by co-operating with the regular elementary schools, and by reaching out, on a part-time co-operative basis with the industries, for the instruction of every boy and girl between the ages of fourteen and seventeen in day courses, and it should aim to hold them, from seventeen on, in evening courses. The failure of the vast majority of cities and towns in this State to start these schools is due to at least three causes, — the inability of some communities to raise enough money to support them, the adherence to traditional forms of education as the only thing worth while and the feeling that those who will not take it in the form in which it is now given are not worth educating; and lastly, to the inability of the majority of this class of people to know their needs and to make them known in an effective way.

To make it practicable to develop part-time vocational courses on an efficient basis, vocational schools will have to be established in all communities where they are not now operated. In some places it may be necessary to allow by law the levying of a special tax above the present tax limit, such money to be used exclusively for the building, equipping and maintaining of these schools. They should continue to furnish all-day instruction in the different lines now taught for boys and girls, and should add to this part-time courses in these and any other lines needed in the community for the boys and girls who are not fortunate enough to be able to attend the all-day school. These schools must continue to make clear to the general public, especially to the public school teachers, the value of industrial education, and remove from it the stigma which has connected these schools with the State's corrective institutions for delinquents. So long as such head lines as the following appear in connection with the State's training schools for bad boys and girls, parents will not send their children to schools which bear the name "industrial." "Youths taught to make their own livings. Prison atmosphere eliminated so far as possible at Industrial School at Shirley; each inmate learns a useful trade." Before this institution can be made to furnish industrial training, the name of the State-aided schools operated under chapter 471, Acts of 1911, should be changed by substituting some such words as "State-aided Vocational Schools," and be hereafter known under this name.

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<sup>1</sup> See Appendix F, p. 124.

## APPENDIX C.

PREVIOUS EDUCATION AND PRESENT INDUSTRIAL STATUS  
OF SELECTED GROUPS OF WORKERS.

## I. COMPARISON OF GROUPS STUDIED.

In order to determine how much education is acquired by young people who leave school at fourteen years of age to enter industry, and what their success in this field has been, various groups, totaling 1,875 individuals, were selected to represent the whole group between the ages of fourteen and seventeen employed in Massachusetts. These young workers were studied by special agents who visited and talked with them in the home, on the street and in the factory.

A group of 690 who left school at about fourteen years of age a year previous to the time of the investigation was studied in the home, the names being selected at random from the list of those to whom age and schooling certificates had been granted.<sup>1</sup> The object of this study was to determine what their success in school had been, the number of years they had attended, the grade reached and their experience during the first year of industrial life.

Another group of 433 who had left school six years before was studied in the same way. These young people were about twenty-one years of age, and had had practically the same school training, but five years' more experience in the industrial world. The success of this group was compared with that of those who had been at work one year.

A group of 302 boys between the ages of fourteen and eighteen who were found unemployed on the streets of Fall River and Lowell was studied to determine why they were not in school or at work, their school history and their industrial experience.

Still another group of 450 apprentices, taking part-time or continuation school work for five hours each week in the city of Cincinnati, was studied, primarily to compare the kind of work done by these young men working in factories in which the management is making a very determined effort to maintain apprenticeship, with that done by young people in Massachusetts where no special effort is made to maintain such a system.

In order to compare the young workers as to education, their present positions and probable future with the average man and woman in

<sup>1</sup> These cases were selected at random as it was thought a more representative group would be obtained in this way. See Thorndike "Mental and Social Measurements."

the different industries, 2,462 mature workers were studied, as follows:—

- A group of 88 men in the machine industry.
- A group of 1,307 men and women in the textile industry.
- A group of 551 men and women in the boot and shoe industry.
- A group of 70 women in the confectionery industry.
- A group of 256 women in department stores.
- A group of 190 men and women in the printing and publishing business.

The 1,875 cases of young workers under twenty-one years of age in the various industries in different cities and towns may be assumed to be fairly typical of the whole 40,000 between the ages of fourteen and seventeen which it is estimated are employed in industry in Massachusetts.<sup>1</sup> Of these, 71 per cent. left school at fourteen years of age, 23 per cent. at fifteen years of age, while but 4 per cent. attended school until they were sixteen years of age. Only 3.9 per cent. went beyond the elementary schools, while 28.1 per cent. did not pass beyond the fifth grade. It appears, therefore, that from one fourth to one third went hardly more than half way through the elementary school; nearly two thirds left before entering the eighth grade. Seventy-nine per cent. were one or more years behind the classes in which they started, so that only 21 per cent., or a little more than one fifth, were as far advanced at the time of leaving as an ideal scheme would contemplate.

The following is a tabulation of the results of a study of 153 unemployed boys on the streets of Fall River:<sup>2</sup>—

TABLE I.—*Showing number and percentage of 153 unemployed boys in Fall River who left school between ten and nineteen years of age.*

AGE AT WHICH BOYS LEFT SCHOOL.	Number who left school.	Per cent.
10 years, . . . . .	1	.6
13 years, . . . . .	13	8.5
14 years, . . . . .	115	75.2
15 years, . . . . .	16	10.4
16 years, . . . . .	5	3.2
17 years, . . . . .	2	1.3
18 years, . . . . .	1	.6
Total, . . . . .	153	99.8

<sup>1</sup> There is reason to believe that at least 2 per cent. left earlier than the compulsory attendance law of Massachusetts permits. These either went to work illegally or remained at home. The actual number of those unlawfully employed may be even larger than the figures in the tables hereafter given would indicate, in view of the fact that investigators had reason to believe that some of the children questioned were shrewd enough to overstate their ages. In the case of the boys who were studied on the street, it is probable that the truth was told in most cases, inasmuch as the investigators were men who could procure the confidence of those boys.

<sup>2</sup> In addition to these 153 boys, 47 others were found, 12 of whom had never attended school in this country, while 35 were still in school.

The above table shows that 9.1 per cent. of the group left school before reaching the age of fourteen, and that 84.3 per cent. left either before or as soon as the law allows. This study revealed a larger percentage who left school before fourteen years of age than was found in the study of any other selected group. Table XIV, page 57, shows a similar result from the study of 149 cases in Lowell. Eighty-six and five tenths per cent. left at fourteen or before, but only 2.7 per cent. left before they were fourteen.

Comparison of the foregoing may be made with the following summary of a study of selected groups in the candy, boot and shoe and textile industries, the names of the workers having been chosen from the records of age and schooling certificates granted one and six years previous to the investigation:—

TABLE II. — *Showing percentage which left school between thirteen and eighteen years to enter various industries, with weighted average for whole group*<sup>1</sup> (1,573 cases).<sup>2</sup>

AGE ON LEAVING SCHOOL.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>3</sup>
13 years, . . . . .	8	2	2	2
14 years, . . . . .	61	56	79	71
15 years, . . . . .	24	36	16	23
16 years, . . . . .	6	5	3	4
17 years, . . . . .	1	1	—	3

<sup>1</sup> See Table IV, p. 102 of Douglas report, 1906, on "Industrial and Technical Education."

<sup>2</sup> This number does not include the 302 unemployed boys interviewed in Lowell and Fall River.

<sup>3</sup> In order to compare fairly these industries which vary widely in *numbers employed* a "weighted average" was used, the weighting being based on the total number employed in each industry.

"A weighted average is one whose constituent items have been multiplied by certain weights before being added, the sum thus obtained being divided by the sum of the weights instead of by the number of items."—King, "Elements of Statistical Method."

The above table shows a more nearly normal group, 71 per cent. leaving at fourteen, while only 2 per cent. left earlier.

Table III shows the grade last attended by the 153 unemployed boys interviewed on the streets of Fall River.

TABLE III. — *Showing grade last attended by 153 unemployed boys in Fall River before leaving school.*

GRADE LEFT.	Number leaving.	Per cent.
First, . . . . .	1	.6
Second, . . . . .	3	1.9
Third, . . . . .	9	5.8
Fourth, . . . . .	22	14.3
Fifth, . . . . .	11	7.2
Sixth, . . . . .	22	14.3
Seventh, . . . . .	34	22.2
Eighth, . . . . .	21	13.7
Ninth, . . . . .	23	15.0
High school first year, . . . . .	7	4.5
Total, . . . . .	153	99.5

The table shows that two thirds of these boys left school before completing the seventh grade; one third went beyond the seventh grade.

The following table shows the percentage which left each grade to enter the candy, shoe and textile industries:—

TABLE IV. — *Showing percentage which left each grade to enter various industries, with weighted average for whole group<sup>1</sup> (1,573 cases).*

GRADE LEFT.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>2</sup>
Second, . . . . .	1.1	—	.9	.6
Third, . . . . .	1.1	2.7	2.1	2.2
Fourth, . . . . .	10.4	2.2	16.1	11.4
Fifth, . . . . .	7.3	4.0	19.2	13.9
Sixth, . . . . .	16.7	14.2	16.1	15.5
Seventh, . . . . .	16.7	21.4	21.9	21.4
Eighth, . . . . .	24.1	21.1	12.7	15.8
Ninth, . . . . .	21.3	26.1	9.2	15.2
High school, first year, . . . . .	1.3	5.7	.9	2.6
High school, second year, . . . . .	—	2.6	.7	1.3
Total, . . . . .	100	100	99.8	99.9

<sup>1</sup> See also Table V, p. 103 of the Douglas report, 1906, on "Industrial and Technical Education."

<sup>2</sup> Averages weighted in proportion to the numbers employed in each industry.

The above table shows that the largest percentage left the seventh grade, or approximately at fourteen years of age, while 43.6 per cent. left before the seventh grade.

Table V shows the length of the period of retardation, together with the percentage of those so retarded in school, before entering the candy, shoe and textile industries.

TABLE V. — *Showing length of period of retardation and percentage of those so retarded entering different industries, with weighted average for whole group (1,573 cases).*

PERIOD OF RETARDATION.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>1</sup>
Ahead of or even with grade, . . . .	12.8	28.1	18.3	21
One year behind, . . . .	25.8	27.3	16.8	21
Two years behind, . . . .	19.2	15.9	19.6	19
Three years behind, . . . .	21.4	19.8	22.0	21
Four years behind, . . . .	8.6	6.3	13.8	11
Five years behind, . . . .	8.6	1.7	8.4	6
Six years behind, . . . .	3.1	1.3	1.0	1

<sup>1</sup> A weighted average of these three industries.

The above table seems to show that as a group those who enter the textile industry have made less progress in the grades and are more retarded than those entering any of the other industries studied. Candy making comes next, while those entering the boot and shoe industry remain in school longer and have progressed farther in the grades than those in the other groups. There are many laggards or retarded children entering the shoe business, but nothing like the number in the textile and candy industries. Of the children who were retarded or behind the grade in which they should have been for the number of years in attendance in school, 9.3 per cent. of the shoe workers were retarded four or more years, while 20.3 per cent. of the candy workers and 23.2 per cent. of those entering the textile industry were so retarded. Nearly one fourth of the young textile workers and more than one fifth of the candy workers were four or more years behind the class with which they started.

Following is a table which shows the wage earned by those employed in various lines of work for one year, together with the percentage earning a given salary.

TABLE VI.—*Showing percentage of those employed in different lines earning a given wage, with weighted average for whole group of those out of school one year<sup>1</sup> (440 cases).*

WAGE.	Candy industry (under 18 years) (per cent.). <sup>2</sup>	Shoe industry (per cent.).	Textile industry (per cent.).	Salesman-ship (under 18 years, girls) (per cent.).	Total group (per cent.). <sup>3</sup>
\$3 to \$3.99, . . . .	36	13	3	66	20
\$4 to \$4.99, . . . .	43	18	7	22	14
\$5 to \$5.99, . . . .	14	24	4	8	10
\$6 to \$6.99, . . . .	6	17	30	2	20
\$7 to \$7.99, . . . .	1	15	18	1	13
\$8 to \$8.99, . . . .	-	5	17	1	10
\$9 to \$9.99, . . . .	-	5	13	-	7
\$10 to \$10.99, . . . .	-	2	4	-	3
\$11 to \$11.99, . . . .	-	-	3	-	2
\$12 to \$12.99, . . . .	-	1	-	-	-
\$13, . . . . .	-	-	1	-	1

This table shows that of the group at work one year, 34 per cent. earn less than \$5 a week; 53 per cent. earn from \$5 to \$9 a week; and 13 per cent. earn over \$9 a week, a relatively large earning power for a group with little or no training. Unless employed in department stores or in some of the men's rooms in shoe factories, many of them lack opportunity for advancement, and are kept on unskilled work, with no change, until they acquire a distaste for all work.<sup>4</sup>

Table VII shows the earning power of a similar group six years after leaving school.

<sup>1</sup> Compare Table IX, p. 112 of Douglas report, 1906, on "Industrial and Technical Education."

<sup>2</sup> Minimum wage report, p. 51.

<sup>3</sup> A weighted average of these four industries.

<sup>4</sup> See study of 149 boys in Lowell, p. 55.

TABLE VII. — *Showing percentage of those employed in different lines earning a given wage, with weighted average for whole group of those out of school six years (489 cases).*

WAGE.	Candy industry (per cent.). <sup>1</sup>	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>2</sup>
\$3 to \$3.99, . . . . .	16.1	-	.7	1
\$4 to \$4.99, . . . . .	24.9	-	1.3	2
\$5 to \$5.99, . . . . .	24.2	2.0	5.7	6
\$6 to \$6.99, . . . . .	17.0	2.0	13.0	10
\$7 to \$7.99, . . . . .	10.9	2.0	20.6	14
\$8 to \$8.99, . . . . .	3.4	9.0	20.8	16
\$9 to \$9.99, . . . . .	3.5	6.0	17.4	13
\$10 to \$10.99, . . . . .	-	8.0	13.7	11
\$11 to \$11.99, . . . . .	-	5.3	2.4	3
\$12 to \$12.99, . . . . .	-	14.0	3.0	6
\$13 to \$13.99, . . . . .	-	6.0	.3	2
\$14 to \$14.99, . . . . .	-	3.3	.7	2
\$15 to \$15.99, . . . . .	-	14.7	.3	5
\$16 to \$16.99, . . . . .	-	3.3	.3	1
\$17 to \$17.99, . . . . .	-	2.0	-	1
\$18 to \$18.99, . . . . .	-	6.6	-	2
\$19 to \$19.99, . . . . .	-	-	.3	-
Over \$20, . . . . .	-	15.3	-	5

<sup>1</sup> Report on Minimum Wage, p. 51.

<sup>2</sup> A weighted average of the typical industries.

The fact that 41.3 per cent. of those employed in the textile industry receive less than \$8 a week accounts in large part for the idleness among boys from eighteen to twenty-one years of age. There is no system of training in the mill which fits those on low-paid, unskilled work for the skilled work of the mill. Only 21 per cent. of the textile workers who have been in the business six years earn \$10 or more, and a negligible percentage of those who work in candy factories earn this amount. Only 21 per cent. of the group which has been employed in the shoe industry for six years, whose members are about twenty-one years old, earn less than \$10 a week. Nineteen per cent., approximately one fifth of the group six years in one of these trades, are earning less than \$7 a week, 38 per cent. are earning more than \$10, and 14 per cent. are earning more than \$15, but it is the higher wage of the young shoe worker which pulls up this average.



The two tables which follow show the percentage of workers in the skilled and unskilled employments after one and six years in industry. The distinctions between "skilled" and "unskilled" are those employed in the respective industries.

TABLE VIII. — *Showing percentage in skilled and unskilled work in different industries after one year of employment, with weighted average for whole group (193 cases).*

WORK.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>1</sup>
Skilled, . . . . .	16	47	48	46
Unskilled, . . . . .	84	53	52	54

<sup>1</sup> A weighted average of three typical industries.

TABLE IX. — *Showing percentage of workers in skilled and in unskilled work in different industries after six years of employment, with weighted average for whole group (489 cases).*

WORK.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>1</sup>
Skilled, . . . . .	52	43	66	58
Unskilled, . . . . .	48	57	34	42

<sup>1</sup> A weighted average of the industries.

There seems to be no relation between the length of time in the business and the kind of work done. Forty-six per cent. of the group which had been at work one year were doing what is considered skilled work, 54 per cent. unskilled work. After six years in the trade the proportions were a little more than reversed; 58 per cent. on skilled work, 42 per cent. on unskilled work; that is, six years mean little, so far as promotion is concerned, very few, only 4 per cent., advancing from unskilled to skilled work during these years. Those who began on moderately skilled work have remained where they started, and most of those who started on unskilled work and did not leave it during the first year or so were still on it. Forty-six per cent. of the unskilled workers were advanced to skilled work before the end of their second year in the trade, that is, before they had ceased to belong to the fourteen to seventeen year old group.

Table X shows the length of time necessary to advance from unskilled to skilled work in certain industries, together with the percentage of the group which required this time.

TABLE X. — *Showing time required to advance to skilled work, and percentage so advancing, for group out of school six years, with weighted average (489 cases).*

YEARS.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Total group (per cent.). <sup>1</sup>
No time required, . . . . .	37	24	9	15
Less than 1, . . . . .	15	13	19	17
1 to 2, . . . . .	13	13	16	14
2 to 3, . . . . .	13	16	19	18
3 to 4, . . . . .	5	15	10	11
4 to 5, . . . . .	2	12	15	14
5 to 6, . . . . .	15	7	12	11

<sup>1</sup> A weighted average.

Little training is needed for the so-called "skilled work." Fifteen per cent. started on skilled work and 46 per cent. were on such work before the end of the second year.

The following table shows increases over initial wages for the workers out of school six years in different industries: —

TABLE XI. — *Showing percentage receiving specified increases in different industries, with weighted average for group out of school six years (489 cases).*

INCREASE.	Candy industry (per cent.).	Shoe industry (per cent.).	Textile industry (per cent.).	Weighted average (per cent.).
\$0, . . . . .	—	7	—	2
\$1 to \$3, . . . . .	75	13	32	24
\$4 to \$6, . . . . .	25	25	49	43
\$7 to \$9, . . . . .	—	25	78	21
\$10 to \$15, . . . . .	—	15	—	5
Over \$16, . . . . .	—	15	1	5

Tables VIII and IX seem to indicate that there is little difference between the kind of work done by the young people who have been six years in the trade and that done by those who have been at work one or two years. There is, however, a great difference in wage. As shown by the above table, 31 per cent., nearly one third, increased their wage \$7 or more; 43 per cent. increased it from \$4 to \$6 beyond the initial wage; only 2 per cent. had no increase, or dropped below

the wage first earned. This increase, since it does not usually indicate employment on a higher grade of work, must mean increase in speed of production or the ability to turn out work rapidly.

Boys and girls are not hired with reference to the possibility of their future advancement in the industry, and there is no system of training which has in view their largest possible development in the line which they enter. The shop or factory in which they first find employment is a matter of chance, and the organization of most of the plants is such that their immediate power and productiveness are the chief concerns of the foreman and superintendent. If such attention is given to the training of young workers, it is done at the expense of the productiveness of the department in which they are employed.

The machine shops are practically the only plants studied which still try to maintain a system of training. Even there, unless such work is done in a department especially organized to deal with the problem of teaching, investigation shows that in almost every case the system has failed, and that the young workers in this industry are as much in need of training, help and guidance as those in the other groups.<sup>1</sup>

Young people are kept on one machine, first, because the immediate demands of the business require it; foremen and superintendents have not time to give instruction; machines are too expensive and floor space too valuable to curtail production for the sake of teaching the worker; second, young workers when allowed to specialize, can make much more money on the special job than is possible under a system which would give them breadth of training; hence they break apprenticeship agreements, and manufacturers are loath to give much time to training young workers when they are likely to leave at any time and go to some other plant.

While the worker in the shoe industry makes the largest wage, it is believed that this is not without its disadvantages, as it is estimated that the young shoe worker can reach the maximum speed and efficiency at nineteen or younger. This is likely to mean a loss of ambition and in many cases a physical breakdown, as it is estimated that in operating certain machines at the maximum speed a person's industrial life as a high wage earner will be little over five years. After that comes the continuous heart-breaking drop to less skilled work and lower wages. Low wages in textiles often mean the same thing. It was not at all unusual in the experience of the investigators to find a young girl who had been running eight to ten looms, and making over \$10 a week, who had been obliged to drop back into less arduous work in three or four years. This is a trial which makes them bitter as no other experience seems to do. A larger proportion of all-round work and a wage less definitely indicating speeding would be an augury for a better industrial future for all young workers.

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<sup>1</sup> See p. 65.

Monotonous work, especially that which requires great speed and uses up nervous energy, should not be done for any long period by young people under eighteen years of age, and the years up to this time should be spent in physical and mental upbuilding in preparation for the years of industrial life to come. Doing such work at an early age requires either too much physical strength or else is of such a nature that the young person becomes discouraged by the continued repetition of the task and acquires a distaste for all work. Boys and girls under eighteen years of age require a constant change of occupation, and up to within a comparatively few years industry has always been so organized that young workers were constantly changed from one kind of work to another. On the farm they had a variety of different occupations during each day, and where boys were apprenticed they acted as helpers to the master, doing a variety of work during the week; whereas industry is now so organized that the work of the young person is very frequently a monotonous repetition of the same task. Employers are complaining that young people no longer want to work, without stopping to realize that the kind of work they wish done is very often in direct opposition to the physical requirements of the child during these years; also, that it would be better, not only for their business but for the welfare of the children, to see that the tasks are changed occasionally rather than to change young help so often. The experience of the boys studied in Lowell<sup>1</sup> is believed to be typical of hundreds of others who are now shifting from factory to factory merely to get a change in surroundings if not in occupation. This is not only the worst possible thing for these young people but it is believed to be more expensive to their employers than is generally realized. It is costing more in actual dollars than would be involved in the adoption of a plan which would provide for an occasional change from one department to another in the mill.

Young people in department stores are not, nominally, as much in need of part-time schooling as those employed in factories and mills. They do not leave school in large numbers at fourteen; more than a third of their group enters the high school, but this education does not fit them for department store work. They have not the elements of an education,—reading, writing and arithmetic. Furthermore, the complete disappearance of the old apprenticeship system leaves them without any way of learning their trade except as it is possible for them to pick it up. This haphazard method does not make enough leaders to satisfy the demands of the industry. While these boys and girls go further in school, they are not able to use their education in a practical way, and they are as much in need of part-time education as any other group.

For further discussion see Appendix G, pp. 147-159.

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<sup>1</sup> See p. 55.

## II. STUDY OF 302 UNEMPLOYED BOYS (149 IN LOWELL AND 153 IN FALL RIVER).

The desire to determine, if possible, why such a large number of boys is idle while the mills need help, and the possibility of getting these boys to take the places of those who would leave the mills to attend a possible part-time school, led to the study of 302 boys who were found idle on the streets of Fall River and Lowell. The findings in both cities were practically the same, and this group was found to be but slightly different from those studied through the age and schooling certificates.

1. For the most part, these boys were born in the United States. Eighty-five per cent. of the Lowell group and 88 per cent. of the Fall River group were born in this country. Practically the same result was found in studying the nativity of the other groups.

2. A larger percentage of this group left school at fourteen years of age or earlier; 86.5 per cent., as against 73 per cent. of those studied through the age and schooling certificates. In Lowell, 83.8 per cent. left at fourteen years of age; 2.7 per cent. left at thirteen years. In Fall River, a smaller per cent., 75.2, left at fourteen years, but 19.1 per cent. left before they were fourteen. After comparing methods of granting age and schooling certificates in the cities, one would expect to find a larger proportion leaving illegally in the latter place.

3. This group is typical as to the grades attained. The largest per cent. left in the seventh year. In Lowell, 33.5 per cent. left during this year; in Fall River, 22.2 per cent. left in the seventh year. While in Lowell a larger number left in the seventh year, fewer left before the seventh year than in Fall River, 30.1 per cent. in Lowell as against 44.1 per cent. in Fall River. Of the total group studied from the age and schooling certificates,<sup>1</sup> 21.4 per cent. left in the seventh year and 43.6 per cent. left before the seventh year.

4. In Fall River, 33.2 per cent. went beyond the seventh grade; in Lowell, 36.2 per cent. went beyond this grade, but in neither case were they any better fitted to cope with the real problems of life than they would have been had they left school earlier.

5. The information collected as to shifting from factory to factory and the length of time out of employment cannot be compared with that gathered for the group studied from the age and schooling certificates, because information on these points was not collected for the other groups. This study shows a tremendous amount of shifting and idleness, and probably the same thing would be found to be true of the other group.

6. These boys were on the streets because of (1) lack of school training and fitness for a vocation; (2) lack of system in the mills

<sup>1</sup> See Table IV, p. 47 of Appendix C.

which would train those on the unskilled job for the skilled; (3) monotonous employment on the same kind of work; (4) failure of the work of the regular public schools to appeal to them.

7. It was the opinion of the investigator that these boys were typical of the average boy found in a city school system; that they were susceptible to the influence of a school of the right type; that, if properly directed, they could be held at work and be given school training instead of growing up in idleness.

The groups studied in Lowell and Fall River did not include the successful worker found in the studies of those who entered the different industries one and six years ago; otherwise the study shows a fairly prevalent condition among young workers. The Fall River study was made under normal conditions, while the study in Lowell was made during a time of unsettled labor conditions; but the results in both cities seem to show the same things to be true, and the Lowell study is presented in some detail to represent the conditions found in both cities. This study was not aimed at any particular industry but at the community as a whole. In all of the other investigations the names were taken from the age and schooling certificates granted to young people who had entered the industry which was to be studied. In the case of the investigation in Lowell, the information was collected from boys on the street by an investigator with a large and very successful experience in dealing with boys, who was able to get their confidence and was especially well qualified to compare these boys with those ordinarily found in the public schools. In the other studies the young people were visited in their homes, and since the names were taken from the age and schooling certificates, the investigators had no means of knowing what type of person would be met or what information would be obtained, while in the Lowell study it was expected to find those who were unemployed and more or less shifting; so, in this way, the group might be considered a selected one. The investigator visited pool rooms, shoe-shining "parlors," back alleys and other places wherever boys were in sight. Those interviewed are a fair representation of a large number of the boys in Lowell. In this way, 149 boys were approached by the investigator, and, with a single exception, questions were answered willingly and courteously. The answers to the questions which were asked have been tabulated and are summarized in the tables which follow. Of the 149 boys, all but 15, or 10 per cent., had worked or were working in a mill just before the study was made.<sup>1</sup> Ninety per cent. of the boys, therefore, were intimately associated with the mill industry. The other 15 boys had last worked as follows: 7 in a shoe factory, 1 with the telegraph company, 4 in stores, 2 in a wire factory and 1 with a show.

<sup>1</sup> This study was made during the first week of the Lowell strike and for this reason more boys were found on the street than would otherwise have been the case; but the experience of all the boys, whether they had been working just previous to the strike or not, was so similar that it is believed to represent the true state of affairs.

TABLE XII. — *Showing birthplaces of 149 unemployed boys in Lowell.*

BIRTHPLACE.	Number.	Per cent.
United States, . . . . .	126	84.5
Lowell, . . . . .	107	71.8
Other places in United States, . . . . .	19	12.7
Outside United States, . . . . .	23	15.4
Total, . . . . .	149	99.9

TABLE XIII. — *Showing parentage of 149 unemployed boys in Lowell.*

PARENTAGE.	Number.	Per cent.
English, . . . . .	19	12.6
French-Canadian, . . . . .	36	24.1
Irish, . . . . .	64	42.9
American, . . . . .	8	5.3
Scotch, . . . . .	3	2.0
German, . . . . .	2	1.3
Swede, . . . . .	2	1.3
Portuguese, . . . . .	6	4.0
Polish, . . . . .	6	4.0
Hebrew, . . . . .	2	1.3
Italian, . . . . .	1	.6
Total, . . . . .	149	99.4

Table XII shows that practically 85 per cent. of the boys were American born and that about 72 per cent. were born in Lowell. Table XIII, however, shows a variety of nationalities, with the Irish, French-Canadian and English in the lead. With the exception of 5.3 per cent., the parents of these boys were foreign born.

TABLE XIV. — *Showing age on leaving school of 149 unemployed boys in Lowell.*

AGE.	Number.	Per cent.
13 years, . . . . .	4	2.7
14 years, . . . . .	125	83.8
15 years, . . . . .	16	10.7
16 years, . . . . .	4	2.7
Total, . . . . .	149	99.9

TABLE XV. — *Showing grade attained in school at time of leaving by 149 unemployed boys in Lowell.*

GRADE.	Number.	Per cent.
Third, . . . . .	3	2.0
Fourth, . . . . .	3	2.0
Fifth, . . . . .	17	11.4
Sixth, . . . . .	22	14.7
Seventh, . . . . .	50	33.5
Eighth, . . . . .	25	16.8
Ninth, . . . . .	24	16.1
Tenth, <sup>1</sup> . . . . .	5	3.3
Total, . . . . .	149	99.5

<sup>1</sup> First year of high school.

Table XIV confirms the statement so often heard that the majority of boys leave school just as soon as the law allows them to do so. This table shows that about 84 per cent. left school at the age of fourteen years, while 87 per cent. left school before the age of fifteen.

Table XV shows the grades attained before the boys left school. Ninety-five, or 63.6 per cent., left before the eighth grade; 120, or 80.4 per cent., before the ninth grade.

TABLE XVI. — *Showing ages at the time of the investigation of 149 unemployed boys in Lowell.*

AGE.	Number.	Per cent.
14 to 15 years, . . . . .	23	15.4
15 to 16 years, . . . . .	49	32.8
16 to 17 years, . . . . .	38	25.5
17 to 18 years, . . . . .	16	10.7
18 to 19 years, . . . . .	15	10.0
19 to 20 years, . . . . .	7	4.6
Over 20 years, . . . . .	1	.5
Total, . . . . .	149	99.5

Table XVI shows the ages of the boys at the time of the investigation. Eighty-four and four tenths per cent. were between the ages of fourteen and eighteen years.



TABLE XVII.—*Showing number of years since beginning work of 149 unemployed boys in Lowell.*

NUMBER OF YEARS.	Number of boys.	Per cent.
Less than 1 year, . . . . .	39	26.1
1 to 2 years, . . . . .	43	28.8
2 to 3 years, . . . . .	34	22.8
3 to 4 years, . . . . .	17	11.4
4 to 5 years, . . . . .	13	8.7
5 to 6 years, . . . . .	1	.6
6 to 7 years, . . . . .	1	.6
Never worked, . . . . .	1	.6
Total, . . . . .	149	99.6

TABLE XVIII.—*Showing the lowest, highest and average initial salary; the lowest, highest and average salary last received; the average increase and per cent. of increase of average salary last received over average initial salaries for boys grouped according to length of service (weekly wage), of 149 cases (unemployed boys in Lowell).*

NUMBER OF YEARS OF SERVICE.	Lowest initial salary.	Highest initial salary.	Average initial salary.	Lowest salary last received.	Highest salary last received.	Average salary last received.	Average increase.	Per cent. of increase in average salary.
Less than 1 year, . . . . .	\$0 78	\$7 22	\$4 29	\$3 00	\$6 60	\$4 68	\$0 39	9.0
1 to 2 years, . . . . .	3 00	7 00	4 52	3 00	8 50	5 05	53	11.7
2 to 3 years, . . . . .	1 50	50	4 2	3 50	8 00	5 70	1 45	34.1
3 to 4 years, . . . . .	3 00	9 0	5 49	4 47	8 50	6.31	82	14.9
4 to 5 years, . . . . .	3 75	9 75	4 64	5 70	11 50	7 48	2 54	51.4
5 to 6 years, . . . . .	5 40	5 40	5 40	6 50	6 50	6 50	1 10	20.3
6 to 7 years, . . . . .	4 05	4 05	4 05	10 00	10 00	10 00	5 95	14.7

The data of the foregoing tables may be summarized as follows:—

Average length of service (years), . . . . .	1.7
Average initial salary (weekly wage), . . . . .	\$4 47
Average salary last received (weekly wage), . . . . .	\$5 51
Average increase in salary (weekly wage), . . . . .	\$1 04
Increase in salary (weekly wage) (per cent.), . . . . .	23.2

There seems to be no consistent relation between the number of years of service and the increase in salary. Table XVIII shows that the one boy who had worked from six to seven years had increased his initial salary 14.7 per cent.; but because he is the only boy in this group, little weight is attached to his case.

Tables XIV to XVIII inclusive reveal conditions as observed by the investigator. These boys are, for the most part, children of foreign parentage who go into the mills as soon as they are fourteen or fifteen years old. Few of them have completed the seventh grade of the grammar school. They begin work in whatever mill they happen to find something to do, generally as sweepers, bobbin boys or creelers. They earn a fair wage for boys of these ages, but because the work requires little skill or training, it soon becomes monotonous, and after three or four months a boy "jacks up" (gives up his job), and begins again in another mill, perhaps at the same kind of work. Nearly all the boys stated that it took them from thirty minutes to eight hours to learn to do their work. Thus a boy goes from one mill to another, learning no particular trade and acquiring not even a small degree of skill in operating a machine. At the end of three or four years his earning power has increased but slightly; he sees no opportunity ahead, and he gives up the mill for anything else which he can find.

The following illustrations are typical of most of these boys:—

*No. 1.*—Boy born in Lowell; left school at fourteen years of age; was in the seventh grade; attended school eight years.

KIND OF JOB (MILL).	Length of service.	Wage.
1. Cleaner, . . . . .	5 weeks, . . . . .	\$2 87
2. Sweeper, . . . . .	2 weeks, . . . . .	4 42
Out of work two weeks, . . . . .	- - - - -	-
3. Sweeper, . . . . .	4 weeks, . . . . .	4 42

*No. 2.*—Boy born in Lowell; left school at fourteen years; in eighth grade; attended school nine years.

KIND OF JOB (MILL).	Length of service.	Wage.
1. Creeler, . . . . .	8 months, . . . . .	\$3 92
2. Sweeper, . . . . .	2 months, . . . . .	4 97
3. Sweeper, . . . . .	4 months, . . . . .	4 59
4. Creeler, . . . . .	3 months, . . . . .	4 86

No. 3.

KIND OF JOB (MILL).	Length of service.	Wage.
1. Backboy, . . . . .	3 months, . . . . .	\$4 00
2. Doffer, . . . . .	2 months, . . . . .	3 00 to 4 00
3. Riding horses for blacksmith, . . . . .	2 months, . . . . .	4 00
4. Twister, . . . . .	2 months, . . . . .	4 00
5. Spare hand, . . . . .	1½ years, . . . . .	6 00
6. Sweeper, . . . . .	2 months, . . . . .	4 00
7. Doffer, . . . . .	2 months, . . . . .	4 00
8. Sweeper, . . . . .	1 year, . . . . .	4 00 to 5 00
9. Cleaner, . . . . .	2 months, . . . . .	4 00 to 5 00
10. Backboy, . . . . .		

This boy was born in Lowell, and left school at fourteen years, in the seventh grade. At each mill he "jacked up" because he did not like the work. In little more than three and one half years this boy had had ten different jobs, an average of four and one half months on each. He started as backboy at a wage approximately the same as that received on his last job, in exactly the same capacity in which he began.

No. 4.— Boy born in Lowell; left school at fourteen years, in seventh grade; attended school nine years.

KIND OF JOB (MILL).	Length of service.	Wage.
1. Creeler, . . . . .	6 months, . . . . .	\$4 06
2. Bobbin boy, . . . . .	1 year, . . . . .	6 30
3. Riding horses for blacksmith, . . . . .	1 year, . . . . .	5 00
4. Spare hand, weaving shed, . . . . .	2 months, . . . . .	6 18
5. Stitcher, . . . . .	4 months, . . . . .	6 84
6. Bobbin boy, . . . . .	2 months, . . . . .	7 72

In reply to the question, "Do you want to learn a trade?" about 50 per cent. of the boys answered, "Yes;" the others gave no definite reply. With few exceptions, the answers given by all the boys showed that little thought had ever been spent upon the matter of preparing for a definite kind of work in the form of a trade.

The boys who were out of work previous to the strike said that they had had no chance to learn a trade, and that the mills offer the only opportunity for work. When it was suggested that the Lowell Industrial School might offer some assistance, several replied that they had made application for admission to the school, but had been refused because

there was already a waiting list. The evening vocational school was closed against them either because they were too young or because they were not engaged in the particular trade or a trade related to the one which they wished to study. Several of the older boys stated that they could not afford to attend a day school because they were obliged to contribute to the family income; but they were anxious to learn some trade. To some of these boys the investigator described a "part-time" school and asked their opinion of it. The one objection seemed to be that they could not afford to be deprived of a week's salary on alternate weeks. Some boys, however, thought that if they could be regularly employed during alternate weeks at a fair salary, at the end of a year they would have earned more than they are earning under present conditions, because of the intervals between the frequent changes in positions, which reduce the yearly earnings.

Here, then, is a group of boys who leave the grammar school as soon as the law allows them to do so, poorly equipped, yet not qualified by age and occupation to profit by attending the evening vocational school, and no other opportunity for further training is open to them.

TABLE XIX. — *Showing evening school attendance of 149 unemployed boys studied in Lowell.*

SCHOOL ATTENDED.	Number.	Per cent.
Evening grammar school, . . . . .	43	28.8
Evening high school, . . . . .	16	10.7
Neither, . . . . .	90	60.4
Total, . . . . .	149	99.9

The above table shows the number of boys in this group who attended an evening school during the past winter. Although nearly 40 per cent. of them appear to have registered for some sort of evening school work, only two boys attended during the entire season. Without exception, those boys who registered in the evening high school began the study of bookkeeping, but soon dropped it because it had not the remotest relation to the work which they were doing for a living; yet it was the only kind of training open to them.

### III. STUDY OF 2,462 ADULT WORKERS.

The information collected from most of these workers was obtained principally through blanks filled out by the workers themselves in the following lines: machine shops, cotton mills, boot and shoe shops, confectionery establishments, department stores, printing and publishing establishments. This method did not prove to be a satisfactory means

of getting detailed information, but it showed the following things to be true:—

1. That foremen and superintendents have received a training which gives them a good general knowledge of the business as a whole, or at least of the work of one department; that they had either received this training before the work became so highly specialized as it is to-day, or they had changed from one shop to another to get general experience, or some one had taken a special interest in them and had given them help and encouragement.

2. That the specialized worker who had received the broadest training is in the group getting the highest wage, and is considered the most valuable man by employers.

3. That in the vast majority of cases the specialized worker had taken from one to six months to learn to do one operation or to run a special machine.

4. That it is a rare exception to find a specialized worker who can do anything other than the specialized work on which he is employed.

5. That where boot and shoe and machine shops are located near textile centers, the vast majority of their workers had started their industrial careers in the textile business.

6. That large numbers of these older workers came to this country as men and women; that they are to-day practically illiterate, and that, because of this, they are handicapped so far as promotion in the business is concerned.

7. That those workers who had an opinion on the value of a wider knowledge of the work, including the operations which precede and succeed their own, expressed themselves as being in favor of such training, and stated that it would mean advancement in the business for them.

The following is a summary of a study made of a group of men in one machine shop doing a manufacturing business on a large scale but with a low-grade product. It does not fairly represent the skill required nor the wage in the business as a whole, but it is a sample of the other studies which were made. The primary object of the study was to determine, if possible, how many of these men began their industrial life in the textile business, why they changed, and what their success in the machine industry had been.

Through the courtesy of the superintendent, the investigator was permitted to interview the men at their work, taking as much time as seemed reasonable. Three departments of the shop were visited and 88 men were interviewed. The purpose of these interviews was to find out if the previous experience of these men had been at all similar to that of the boys investigated on the street, and if so what their success in industry had been. The purpose of the investigation was briefly explained to each man, and in all cases questions were answered willingly

and courteously. Every man showed a disposition to do anything in his power to make the future of the boys who must take their places brighter than their own.

Most of these men called themselves machinists, yet few claimed to have the qualifications and experience which this name implies. With few exceptions, each man had been hired to operate a particular machine or to do a particular kind of work, the nature of which had not been changed since employment began.

The length of service in the present occupation varied from a few months to twenty-five years. Of the 88 men interviewed, 69, or 78.4 per cent., had worked in a cotton mill before entering the machine shop; 19, or 21.6 per cent., had not. Their reasons for leaving the mill, their wages in mill and shop, and their mill records are shown in the three tables below:—

TABLE XX.—*Showing reasons for leaving mill.*

REASON FOR LEAVING MILL.	Number of men.	Per cent.
Wanted to learn a trade, . . . . .	20	28.9
Did not like the work, . . . . .	20	28.9
No chance to advance, . . . . .	12	17.3
Discharged, . . . . .	2	2.9-
Forced out (strike), . . . . .	4	5.6
Moved away, . . . . .	2	2.9-
Sickness, . . . . .	2	2.9-
No answer, . . . . .	7	10.1
Total, . . . . .	69	100.0

TABLE XXI.—*Showing average wage of workers who began in machine shop.*

NUMBER OF YEARS IN MACHINE SHOP.	Number of men.	Average weekly pay.
2 years, . . . . .	2	\$8 10
3 years, . . . . .	4	10 26
4 years, . . . . .	1	10 80
5 years, . . . . .	2	10 26
7 years, . . . . .	4	11 34
9 years, . . . . .	1	10 80
10 years, . . . . .	3	10 26
15 years, . . . . .	1	21 60
20 years, . . . . .	1	-1

<sup>1</sup> Would not tell.

TABLE XXII. — *Showing previous record of men now in machine shop.*

NUMBER OF YEARS IN MACHINE SHOP.	Number of men.	Average time in mill.	Average pay in mill per week.	Average pay in shop.
Less than 1 year, . . . . .	11	1 y. 9 m.	\$6 60	\$9 05
2 years, . . . . .	6	1 y. 8 m.	7 39	9 50
3 years, . . . . .	9	4 y. 6 m.	8 06	9 30
4 years, . . . . .	4	1 y. 0 m.	7 83	10 12
5 years, . . . . .	2	2 y. 0 m.	5 87	11 42
6 years, . . . . .	6	1 y. 1 m.	8 25	9 95
7 years, . . . . .	7	0 y. 9 m.	5 45	10 05
8 years, . . . . .	6	2 y. 10 m.	6 13	11 00
9 years, . . . . .	2	1 y. 8 m.	10 00	12 25
10 years, . . . . .	1	4 y. 0 m.	5 50	10 88
12 years, . . . . .	3	2 y. 5 m.	5 36	11 00
14 years, . . . . .	3	1 y. 0 m.	6 20	11 67
15 years, . . . . .	2	0 y. 6 m.	4 50	10 00
16 years, . . . . .	2	2 y. 6 m.	3 00	12 50
17 years, . . . . .	1	0 y. 11 m.	6 60	9 70
18 years, . . . . .	1	2 y. 8 m.	6 30	10 80
20 years, . . . . .	2	3 y. 0 m.	7 50	11 90
25 years, . . . . .	1	1 y. 6 m.	6 30	31 50

The tabulation of information obtained from these men shows that their experience in the mill gave them no preparation for the machine industry, so they had to be employed as specialists on work requiring comparatively little, if any, more skill than was required in the mill. The wages which these men are now receiving would seem to leave no doubt that a system of training begun at fourteen years would have enabled them to reach very much better positions in the machine shop after leaving the mill, and would have enabled them to do at least as well, if not better, than they are now doing had they remained in the textile business.

#### IV. CONDITIONS IN MACHINE SHOPS.

The young people who go to work in machine shops were not studied as much in detail as were the workers in the candy, textile and boot and shoe industries, but there is evidence to show that the age at which they leave school and the grade reached, etc., are practically the same as in the other industries mentioned.

The kind of work done, the requirements of the trade and the conditions of learning were studied. On the whole, the industry still holds to the traditions of apprenticeship, and the proprietors of these

establishments prefer boys over sixteen years old. From the published reports, it would appear that there are about 935 boys, or 1.9 per cent. of the whole number of persons employed in the industry, who are under seventeen years of age. The kind of work done by these young people roughly corresponds to that done by the young shoe worker. About half are doing miscellaneous work as helpers, errand boys and a low grade of production work, such as drilling, cleaning castings, simple milling, etc., while the other half are doing what might be considered the skilled work, — running such special machines as lathes, planers, milling machines, grinders, etc. The division between skilled and unskilled work does not seem to be made on the basis of the qualifications of the worker, but is due to the fact that some establishments have found that boys from fourteen to seventeen years old can do the same kind of work that is often performed by men; hence they employ a much larger percentage of young workers and find it profitable to do so. Ten of the twenty-five machine shops which sent in formal reports on apprenticeship gave from 10 to 100 apprentices each serving terms of from three to four years. Fifteen of the shops reported no system of training at all. Where the management states that such a system exists, the training is limited to the kind of work done in that particular shop, or, in some instances, to the particular department or machine on which the young worker is employed. Even where the shops have a sufficiently broad range of work to enable them to give the all-round experience which is necessary to make a first-class machinist, it is difficult or impossible to maintain such a system of training. All the pressure on the foreman and superintendent is for production, and when it is found that a boy is capable of doing one job well, he will be kept on the specialized machine until he becomes discouraged, and leaves. He may then “bluff his way” in another shop. This is well illustrated by three typical expressions of opinion of apprentices, obtained from a study of 450 cases. These are used because they are from apprentices in shops in which the management is making a special effort to have the boys changed from machine to machine, and to give them the broadest possible training to fit them for advanced work.

I am working at the ————— Company. I was hired here with the understanding that I could learn the machinist's trade. I was put on the gear shaper to help a man out one day and I got along so well, he said to stay a few days longer. Now since I can run the machine so well I do not get off any more. I have asked the foreman to be taken off, and he said he could not do so at present. As far as other treatment from the foreman I cannot complain. What I would like to get is a chance, a show. — FEB. 28, 1912.

I am employed by the ————— Machine Tool Company. At the present time I am in the lathe department and would like to run a miller or drill press. I would like to be changed every year or year and a half. I never have much trouble with the foreman when I spoil my work. He



always tells me where my weak points are and I correct them. Never have any trouble getting a raise. I have been working on the lathe since I started here, and it will be two years and a half this month, and have only received three raises. I will be satisfied to be put on a drill press if possible. — FEB. 8, 1912.

I have been employed by the ————— Company for about two years and a half as apprentice, and during that time I think I have been treated fair and square by both foremen and employees. This firm has no regular system for their apprentices, but they keep a fellow on one machine till he complains; then he may get a change, but sometimes, as was my case, I was on the tool grinder close to nine months, but most always he will get what he asks for. Now this could be improved upon by setting a regular system, say four months on a machine following the fellow before him. Other conditions in the shop are mostly what you make them. The foreman will treat you right if you treat him so. The only trouble with the foremen is that they are afraid to ask for any tools. — FEB. 8, 1912.

Furthermore, this system does not furnish enough skilled help for the trade. The demands of the automobile business have drawn large numbers away from the machine shops, and they have not yet been adequately replaced. Eighteen shops report a marked scarcity of skilled labor to 10 which found no such lack. One of the manufacturers felt that something must be done immediately if Massachusetts is to keep its place in industry, since western cities, notably Cincinnati, are already taking the machine trade away from Massachusetts.

#### IV. STUDY OF WORKERS IN THE CONFECTIONERY INDUSTRY.

The report of the Minimum Wage Commission on the candy industry furnishes nearly all the material necessary for conclusions as to the need for part-time schools. A limited investigation was undertaken to supplement this report on the question of training in the school and in the trade, and to arrive at some idea of the worker's attitude toward the reduction in wage that might be necessary for part-time school attendance. Twenty-five girls who started to work in the candy industry in 1905-06 and 20 minors who started to work in 1910-11, together with 52 members of the continuation school, were visited.

According to the Minimum Wage report,<sup>1</sup> 38.2 per cent. of the workers in the candy industry are seventeen years of age or under, and 71.8 per cent., twenty or under. That is, more than one third of the workers are of the normal continuation school age, fourteen to seventeen, and nearly three fourths between fourteen and twenty.

The majority, 52.6 per cent., of the candy workers are native born of foreign parents, while 29.7 per cent. are foreign born. The Italians form 67.9 per cent. of the foreign workers, and the Hebrews 12.8 per cent. It is a much more distinctly foreign group than the department-store employees, or shoe-factory workers.

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<sup>1</sup> Report of the Commission on Minimum Wage Boards, p. 44.

The small group investigated shows that 20 per cent. left school before reaching the sixth grade, 33.6 per cent. left in the sixth and seventh grades, while only 21.0 per cent. went into the ninth grade, and 1 entered the high school.

TABLE XXIII. — *Showing grade of school left to enter confectionery industry (95 cases).*<sup>1</sup>

GRADE LEFT.	Number leaving.	Per cent. leaving.
Second, . . . . .	1	20.0
Third, . . . . .	1	
Fourth, . . . . .	10	
Fifth, . . . . .	7	33.6
Sixth, . . . . .	16	
Seventh, . . . . .	16	
Eighth, . . . . .	23	24.2
Ninth, . . . . .	20	21.0
First year high school, . . . . .	1	1.0
Total, . . . . .	95	99.8

<sup>1</sup> No data for 2 cases.

Moreover, 8.4 per cent. left school before they were fourteen, 61.1 per cent. left between fourteen and fifteen, and 24.2 per cent. at fifteen, only 6.3 per cent. staying in school until they were sixteen years of age or over.

TABLE XXIV. — *Showing age at which school was left to enter confectionery industry (95 cases).*

AGE.	Number.	Per cent.
12 years, . . . . .	2	8.4
13 years, . . . . .	6	
14 years, . . . . .	58	61.1
15 years, . . . . .	23	24.2
16 years, . . . . .	5	6.3
17 years, . . . . .	-	
18 years, . . . . .	1	
Total, . . . . .	95	100.0

As a group they enter the industry early and without the normal equipment of education. That 91.6 per cent. should be fourteen or over when they left school, and only 24.2 per cent. should have reached the eighth grade, indicates a group of girls who are very much retarded.

TABLE XXV. — *Showing length of period of retardation, together with percentage of those entering confectionery industry who were so retarded (95 cases).*

YEARS BEHIND.	Number.	Per cent.
0, . . . . .	12	12.6
1, . . . . .	24	25.3
2, . . . . .	20	21.0
3, . . . . .	20	21.0
4, . . . . .	8	8.4
5, . . . . .	8	8.4
6, . . . . .	3	3.2
Total, . . . . .	95	99.9

As a matter of fact, only 12.6 per cent. were in the normal grade for their age, 25.3 per cent. were retarded one year, 62.0 per cent. two years or more, and 20.0 per cent. were retarded four years or more. This means that the group is in general an inefficient one, an aphorism perhaps, but worth establishing statistically. This group, then, needs part-time schooling for the removal of elementary school deficiencies. They are far below any tolerable level of education and intelligence for any group of citizens. There is very little opportunity for actual trade training for candy-factory workers.

According to the Minimum Wage report there is a very large seasonal variation, a great demand for workers at the time of the Christmas trade, with a very dull season following.<sup>1</sup> Most of the new workers come into the trade at this time and are quickly taught as much as they need to know. The following table shows the method of learning: —

TABLE XXVI. — *Showing methods of learning in candy industry, with percentage so learning (95 cases).<sup>2</sup>*

GROUP.	Picked up (per cent.).	Taught in factory (per cent.).
Six years in industry, . . . . .	12	51
One year in industry, . . . . .	1	21
Total, . . . . .	13	72

<sup>1</sup> Report of the Commission on Minimum Wage Boards, p. 62.

<sup>2</sup> Incomplete data for 15 per cent.

Only a small proportion, 13 per cent., "pick up" their trade, and they are largely the workers on skilled processes, fancy packing and

dipping. It is estimated that it takes about six months to make an expert dipper, — as long as it takes to make a good shoe stitcher and much longer than it takes to make a good buttonhole operator. It takes from two to three months to make an expert fancy packer, a length of time sufficient to make a good skiver. There are, then, really skilled processes in candy making.

Sixty-eight and six tenths per cent. of the group of workers who have been out of school six years were on skilled work, while 15.8 per cent. of the minors, 75 per cent. of those attending the continuation school, were on skilled work. One out of every two girls who stay on in the industry, then, advance to skilled work, but about one half of the girls who left school six years ago to enter the candy industry have left to be married.

TABLE XXVII. — *Showing percentage on skilled and unskilled work in confectionery industry (95 cases).*

GROUP.	SKILLED WORK.		UNSKILLED WORK.		No data.
	Number.	Per cent.	Number.	Per cent.	
Six years in industry, . .	46	68.6	21	31.3	3
One year in industry, . .	3	15.8	16	84.2	6

There is not sufficient opportunity in the trade to justify training in school for any portion of it. There is a large factory force with only a small number of people at the head, and the salaries paid offer no incentive to the ambitious. The large proportion of these candy workers marry early, and are much more in need of sound training along the line of the relation of income to expenditure and scientific housekeeping than they are of trade training.

## V. STUDY OF WORKERS IN THE COTTON MILLS.

There is little doubt in the minds of those acquainted with the conditions that more schooling, especially that of a practical nature, is needed by the young workers in our cotton mills. The establishment of part-time schools seems almost imperative when one considers that the large majority of workers are of foreign parentage, that few of them have had schooling of even grammar school grade, and that the majority of them, although they have been working in cotton mills since they left school six years ago, are still doing unskilled work for incredibly low wages. Without training specially adapted to their needs, many of them can never hope to advance so that they will be able to do skilled work or fill positions of responsibility.

*Nationality.*

While a majority of the young workers in cotton mills are American born, only a small proportion are of American parentage. For example, in Lowell, 84 per cent. of the young workers in cotton mills were born in this country, but only 5.3 per cent. of these are of American parentage. In New Bedford, only 13.4 per cent. of the 75.8 per cent. of American birth have parents who were born here. These percentages are undoubtedly too large, as few of those of foreign birth could be traced to their homes, owing to the fact that there are large numbers of the same name. To-day Portuguese, Italians, Poles, Greeks and Syrians are just beginning to make their numbers felt in the industry.

*Schooling.*

These workers have not received much schooling. Although most of them have spent the normal amount of time attending school, they have accomplished relatively little in that time. A large majority, 80.3 per cent., left school at fourteen, only 19.3 per cent. remaining in school until fifteen or older. Of all those investigated, 72.8 per cent. did not get through the seventh grade, 24.5 per cent. left the eighth or ninth grades and only 2.7 per cent. graduated from grammar school and began the high school course.

TABLE XXVIII. — *Showing number and percentage of textile workers leaving different grades of school (478 cases in Fall River, New Bedford and Lowell.*

GRADE LEFT.	Number.	Per cent.
First to fifth, . . . . .	150	31.4
Sixth to seventh, . . . . .	198	41.4
Eighth, . . . . .	66	13.8
Ninth, . . . . .	51	10.7
Beyond, . . . . .	13	2.7
Total, . . . . .	478	100.0

Who will claim that the education given in the first seven grades of our public schools will enable an average boy to enter a cotton mill and by dint of perseverance reach a position sufficiently responsible to command respectable wages after spending six or seven years in the mills?

Only 19.5 per cent. of the 271 workers in Fall River and New Bedford for whom we have data were in the grade they should have been, or ahead of it, according to the number of years they had attended school.

TABLE XXIX.—*Showing retardation of adult and minor textile workers by sex (271 cases in Fall River and New Bedford).*

YEARS RETARDED.	GROUP IN INDUSTRY SIX YEARS (ADULTS).		GROUP IN INDUSTRY ONE YEAR (MINORS).		Total.	Total per cent.
	Boys.	Girls.	Boys.	Girls.		
1, . . . . .	21	20	6	9	56	20.7
2, . . . . .	27	23	10	5	65	24.0
3, . . . . .	27	25	6	15	73	26.9
4, . . . . .	20	16	8	2	46	16.9
5, . . . . .	8	15	1	4	28	10.3
6, . . . . .	—	—	1	1	2	.7
7, . . . . .	—	—	—	1	1	.4
Total, . . . . .	163	99	32	37	271	99.9

Of those retarded, 55.2 per cent. were three or more years behind the grade in which they should have been according to the number of years they had attended school, and 11.4 per cent. were retarded from five to seven years. Barely 27.5 per cent. of those in Fall River and New Bedford who had been out of school six years, and only 20 per cent. of those in these cities who had been out of school one year, had attended evening school. Illiteracy in the older group accounts for the larger percentage which had attended night schools.

It can be clearly seen from the backwardness of the group in school and from the small number attending evening schools that these workers are in dire need of further education, and that such education must be imparted during the day, as they are much too weary at night to profit by instruction.

*Time spent at Home.*

A number of the boys and girls who left school six years ago had spent from several months to four years of that time at home.

TABLE XXX.—*Showing number and percentage of textile workers who spent different periods of time at home before entering industry.*<sup>1</sup>

YEARS AT HOME.	Boys.	Per cent.	Girls.	Per cent.	Total.
None, . . . . .	111	87.3	61	53	172
0 to 1, . . . . .	12	9.4	39	33.9	51
1 to 2, . . . . .	3	2.4	10	8.7	13
2 to 3, . . . . .	—	—	3	4.3	3
3 to 4, . . . . .	1	.8	2		3
Total, . . . . .	127	99.9	115 <sup>2</sup>	99.9	242

<sup>1</sup> Based on Fall River and New Bedford returns only for those who left school six years ago.

<sup>2</sup> Does not include 13 who married.

While 9.4 per cent. of the boys had lost from several months to a year, 33.9 per cent. of the girls had spent this amount of time at home. Three and two tenths per cent. of the boys and 13 per cent. of the girls who had not married had lost from one to four years.

The data collected for the 478 cases in the three cities studied shows that of those who had been out of school but one year, 44 per cent. were on skilled work and 52.4 per cent. of the younger girls were doing skilled work, as opposed to 30.2 per cent. of the boys, while only 55 per cent. of the boys and 73.4 per cent. of the girls who had been in the cotton mills six years were on skilled processes, thus showing how much advancement is made during the first year at work as compared with that made during six years in the industry. To advance in the industry, 70.3 per cent. of those leaving school six years ago found it necessary to go to another mill. Only 21.5 per cent. were able to advance without leaving, and 8.1 per cent. alone could advance more than one step in the same mill. Of those leaving school one year ago, 77.4 per cent. remained at the same job, 19 per cent. advanced one step in the same mill and 3.6 per cent. were promoted twice.

A large amount of shifting would probably be obviated if these workers could attend part-time schools during their first years at work. At present, when a worker wants to advance he usually finds the way blocked in the mill in which he happens to be employed because those in authority do not consider him competent. As a result the boy leaves and seeks a chance to try himself out on a better job in another mill, and in so doing he may injure both machinery and material. If part-time schools were established so that workers could have an opportunity to learn more of the industry, they would probably find their foremen more willing to advance them where promotion is possible, and thus greatly diminish the amount of shifting and time lost.

### *Wages.*

A majority, 71.8 per cent., of those who had been at work six years were still earning between \$6 and \$10 a week; 20.1 per cent. were earning between \$10 and \$15 a week, while only .99 per cent. were making \$15 or more. More than three fourths, 77.6 per cent. of those who had been at work only one year, were earning between \$6 and \$10, while 12.9 per cent. were getting between \$3 and \$6.

The workers are deeply impressed by the small opportunity of reaching a good position in the cotton mills through their own efforts, and therefore they are much interested in the thought of part-time schools. There are two reasons for this interest. A majority of these young workers, 54.1 per cent., would welcome a chance to take up other lines of work offering fair opportunities, and part-time schools which offer instruction in various trades would be of great help to them. Others who expect to remain in the mills would receive much benefit if they could have instruction in the cotton industry and the manu-

facture of cloth. Thus part-time schools would serve two purposes for the young workers in cotton mills. Courses of instruction in the cotton industry should be offered for the benefit of those who expect to remain in the mills, and thus increase their efficiency and enable them to advance. In addition, courses should be offered for those who want to become machinists, carpenters, plumbers, shoemakers, dress-makers, milliners, or to enter business. Besides these trade-training courses, instruction should be given to increase the general knowledge of these workers, and thus make them better citizens.

#### VI. STUDY OF YOUNG WORKERS IN THE BOOT AND SHOE INDUSTRY.

Young workers in the boot and shoe industry are in need of some form of schooling which will make it possible for them to overcome the obstacles in the way of their advancement. The factories need more efficient workmen, who understand more than one department. If they can acquire some knowledge of commercial arithmetic, methods of figuring costs, and of factory organization they will possibly be in line for promotion to positions as foremen and superintendents.

The workers in the shoe factories are more largely American than those in the mill industries, as shown by the following table:—

TABLE XXXI.—*Showing nativity and parentage of workers in shoe industry who were out of school six years (151 cases).*

	BOSTON.		BROCKTON.		LYNN.		TOTAL.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
151 cases: —								
Native born, . . .	49	96	41	85	32	62	122	80.8
Foreign born, . . .	2	4	7	15	20	38	29	19.2
Total, . . .	51	100	48	100	52	100	151	100.0
128 cases: <sup>1</sup> —								
Native parents, . . .	10	25	12	25	22	43	44	31.0
Foreign parents, . . .	30	75	25	75	29	67	84	69.0
Total, . . .	40	100	37	100	51	100	128	100.0

<sup>1</sup> Complete data could be secured for only this number.



TABLE XXXII. — *Showing nativity and parentage of workers in shoe industry who had been out of school one year (86 cases).*

	BOSTON.		BROCKTON.		LYNN.		TOTAL.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
86 cases: —								
Native born, . . .	27	90	26	89.0	24	89	77	89
Foreign born, . . .	3	10	3	11.0	3	11	9	11
Total, . . .	30	100	29	100.0	27	100	86	100
78 cases: <sup>1</sup> —								
Native parents, . . .	6	24	10	37.5	10	37	26	28
Foreign parents, . . .	19	76	16	62.5	17	63	52	72
Total, . . .	25	100	26	100.0	27	100	78	100

<sup>1</sup> Complete data available for only this number.

In Lynn, 38 per cent. of those who had been in the industry six years were foreign born. In Brockton and Boston together, only 19 per cent. were foreign born. Lynn undoubtedly represents more correctly the truth of the situation for the whole industry. It is probable that the figures in the above tables which indicate the total number of American born in both groups are much too high an estimate for the industry as a whole. The groups in Brockton and Boston represent a somewhat selected group from the point of view of nationality because the names were taken from the age and schooling certificates. In Lynn this material was not available, so a group was selected from the factories, made up of those who began their industrial career in the shoe factory at fourteen years of age and who had been at work from five to seven years. Since the names were not taken from the age and schooling certificates it did not always happen that they had been to school in Lynn. It was to be expected, therefore, that this group would show a larger percentage of foreign-born workers than was found in the other groups.

Of the American born, only 31 per cent. were born of American parents. These were largely workers who came from Maine, New Hampshire and Vermont, and from the outlying towns in the shoe districts of Massachusetts. In the cities themselves, the workers of American parentage usually try to obtain work at higher wages or with a larger future than the shoe factory offers. Among the city born it is the second generation of Irish, French, English and German which predominates in the industry, — Irish in Boston, Swedes in Brockton, French and Germans in Lynn and Russians everywhere. The Italians, Greeks and Poles are newcomers in the industry, only a few of them

could be reached through the age and schooling certificates, which indicates that they have received very little schooling in America; consequently, they are not proportionately represented in these tables; yet these returns undoubtedly indicate the true state of affairs. There is a large group of workers of American birth and American parentage, unusually large for a factory industry. It is to be expected, therefore, that there will not be so great a need for the removal of elementary school deficiencies. That this is the case is shown by the following tables:—

TABLE XXXIII.—*Showing percentage of shoe workers leaving different grades of school (245 cases).*

GRADE LEFT.	Group in industry six years (per cent.).	Group in industry one year (per cent.).	Total group (per cent.).
Below sixth, . . . . .	13.5	12.5	10.2
Sixth, . . . . .	12.5	12.5	14.3
Seventh, . . . . .	18.4	20.0	17.3
Eighth, . . . . .	26.8	20.0	25.3
Ninth, . . . . .	22.2	20.0	23.2
High school, . . . . .	6.6	15.0	9.7
Total, . . . . .	100.0	100.0	100.0

TABLE XXXIV.—*Showing age at which shoe workers left school to enter industry (245 cases).*

AGE.	GROUP IN INDUSTRY SIX YEARS.		GROUP IN INDUSTRY ONE YEAR.		Total group.
	Number.	Per cent.	Number.	Per cent.	
12 years, . . . . .	2	1.2	—	—	2
13 years, . . . . .	4	2.6	—	—	4
14 years, . . . . .	90	57.3	46	52.3	136
15 years, . . . . .	54	34.4	34	38.7	88
16 years, . . . . .	7	4.5	6	6.8	13
17 years, . . . . .	—	—	2	2.2	2
Total, . . . . .	157	100.0	88	100.0	245

Of the whole group investigated, 48.5 per cent. left in the eighth or ninth grade,—25.3 per cent. in the eighth and 23.2 per cent. in the ninth. It is true that 10.2 per cent. did not reach the sixth grade, but 9.7 per cent., nearly one tenth of the total, entered high school. This indicates a fair elementary education for the group.

The young people who go into the shoe factories are typical of the whole group not effectively reached by the regular school. For the whole group, 87.1 per cent. are retarded one year or more, and 12.9 per cent. four years or more.

TABLE XXXV.—*Showing retardation in school of workers who entered shoe industry (171 cases).*

YEARS RETARDED.	Group in industry six years.	GROUP IN INDUSTRY ONE YEAR.			Total.
		Boys.	Girls.	Total.	
1, . . . . .	44	12	9	21	65
2, . . . . .	28	6	4	10	38
3, . . . . .	39	2	5	7	46
4, . . . . .	10	2	3	5	15
5, . . . . .	2	2	—	2	4
6, . . . . .	2	1	—	1	3
Total, . . . . .	125	25	21	46	171

The 27.8 per cent. who are even with or ahead of the grade in which they should have been, according to the number of years they had attended school, seems a small proportion, but it is larger than it is in the cotton mills or candy factories. While the educational status of this group does not seem very good, it is exceptional in comparison with the other industries. Yet it may easily be seen that these young people have not had enough schooling to make them very efficient foremen or forewomen.

As a group they are ambitious; 26.1 per cent. of the twenty to twenty-one year old workers, and 31.8 per cent. of those who had been at work one year, had attended night school. If from one fourth to one third make the effort to go to night school after a long day in the factory, it is only fair to expect that from one third to one half would go to a part-time school. Thus the material with which a part-time school would have to deal in the shoe industry is good. The group has a fair education, is not abnormally dull, as measured by the regular school standards, and is ambitious enough to take advantage of offered opportunities. They need some training to show them the relation between their school knowledge and the problems of their industry.

Much more needed, however, is some wider knowledge of the trade itself, and a reform in the method of teaching separate jobs. It is unusual in a shoe factory for a man to know more than one good job. If the work is short in his own shop, he has only one specialty to offer in his search for work. If his shop is overcrowded in other departments, he may and often does have to sit idle at his machine

while other people work overtime. Lack of a sufficiently wide knowledge of the industry makes it impossible to move freely from the factory in which there are too many to the one where there are too few.

Some reform in the method of teaching the trade is desirable. At present 27.7 per cent. "pick up" their trade, while 68 per cent. are taught in the factory. Teaching in the factory means one thing in Boston and another in Lynn and in Brockton. In Boston, a boy is set deliberately, to learn a job; in Lynn and Brockton, if he takes advantage of his many opportunities to "do a good turn" for the men at their machines while he is working around the room, they will return the favor by showing him, in odd moments, how the machine works, and occasionally letting him try to run it. It is a rare thing for a foreman, or any one in authority, to teach a young worker in Lynn and Brockton, more rare in Brockton than in Lynn. The proportion who learn outside of the factory is negligibly small. Girls have an easier time, in that they are given an opportunity to learn, at one time or another, everything which they cannot learn by watching. The result of the restricted opportunities for men is that they half learn a job in one shop and then go on to another to work at it. In their own shop they would have little chance.

TABLE XXXVI.—*Showing number of changes of occupation within this industry made by shoe workers in six years (153 cases).*

CHANGES.	Number.	Per cent.
None, . . . . .	91	59.0
One, . . . . .	48	31.4
Two, . . . . .	5	9.6
Three, . . . . .	7	
Four, . . . . .	2	
Total, . . . . .	153	100.0

Fifty-nine per cent. were not able to advance in the factory; 31.4 per cent. were able to advance one step without changing factories, while only 9.6 per cent. were able to advance more than one step. This statement is based on the assumption that a change of job within the factory means an advance,—which is true in the vast majority of cases.

Another result is that they are forced to stay on unskilled work longer than their age requires, because they do not have a fair opportunity to learn to do skilled work. In Boston, where there is considerable freedom in teaching, 60 per cent. go on to a skilled operation

in two years or less; in Lynn, which comes next in opportunity, 51 per cent. are on skilled work in that time, while in Brockton, where the opportunities for learning are very restricted, only 38 per cent. get on to a skilled job in less than two years. Of the whole group which had been out of school six years, only 43 per cent. were on skilled work. Of those in Lynn whose last job in the shoe factory was on unskilled work, 65.3 per cent., and 63 per cent. in Brockton were on unskilled work for four years or more; while in Boston only 10.5 per cent. were on unskilled work more than four years. Apparently in Boston, if they do not get on to skilled work after a few years, they get out of the industry, while in Brockton and Lynn, where other opportunities are few, they stay on.

The shifting from factory to factory may be described as follows: in Boston 88.7 per cent. of the workers who had been out of school six years had not shifted at all; in Brockton 32.2 per cent. and in Lynn 27.2 per cent. had not shifted at all; but in Boston 49.2 per cent. had worked in the shoe industry one year or less, while in Brockton 15.1 per cent. and in Lynn 9.1 per cent. had worked in the shoe industry one year or less. (The Lynn figures are not safe on account of the method of selecting.) In Boston, then, the workers either stay in the same factory or leave the industry entirely. Of course, until recently there have not been many shoe factories in Boston, so that the worker could not wander from one to another. Those who have worked one year are not "shifTERS." In Boston only 2 of this group had shifted at all; in Brockton only 3, while in Lynn 4—more than half—had shifted. Only 2, however, had shifted more than once. This shifting is not the casual thing which is to be found in so many of the monotonous industries; 31.3 per cent. were forced to shift, either because the work was slack or because they were "fired," or because they were ill; 28.7 per cent. shifted to advance. *Only 19.9 per cent.* shifted because they "didn't like it," the reason given by the professional "shifter."

While advancement in the trade is difficult for the native group, or for those who have attachments in the shoe city, it is easy for the rover and the foreigner. The rover can go to some nonunion city or town and learn his trade there; when he comes back with a knowledge of the trade he is admitted to the union without much question. The foreigner is willing to accept shop conditions which are intolerable to a person who has some standards of decency. He can often get the training in the one or two nonunion shops existing in every union city, and, when he has acquired his knowledge, he is admitted to the union. It is the young boy who lives at home and who would not stand the conditions in the "scab" shop who loses out on this method. Even when he learns his job he does not learn anything about the machine which he operates. He can run it, and that is all.

In order to teach more economically, to give native workers a fair chance in the industry, to increase the supply of heads of rooms and superintendents, and to furnish sufficient training for the free exercise of whatever inventive talent these workers may have, some form of industrial training is necessary.

So far as money is concerned, the workers in this trade are prosperous. More than one fourth, 28.5 per cent., of the workers who had been in the industry more than six years get between \$15 and \$20 a week, and more than one half get between \$12 and \$20 a week, while 7.9 per cent. get over \$20.

TABLE XXXVII. — *Showing wage received by shoe workers after six years in industry in three different cities (141 cases).*

WAGE.	LYNN.		BROCKTON.		BOSTON.		TOTAL.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
Under \$8, . . .	2	3.8	3	7.3	7	14.9	12	8.5
\$8 to \$9.99, . . .	9	16.9	8	19.5	5	10.6	22	15.7
\$10 to \$11.99, . . .	6	11.3	6	14.7	7	14.9	19	13.7
\$12 to \$14.99, . . .	11	20.7	15	36.5	11	23.4	37	25.7
\$15 to \$19.99, . . .	17	32.0	9	21.9	14	29.8	40	28.5
Over \$20, . . .	8	15.2	—	—	3	6.4	11	7.9
Total, . . .	53	99.9	41	99.9	47	100.0	141	100.0

Lynn ranks highest in wages paid young workers, Boston comes next, and Brockton is lowest. In Lynn, 47.2 per cent. get over \$15 a week; in Boston, 36.2 per cent.; and in Brockton, 21.9 per cent. receive over \$15 a week. In Lynn, 15.2 per cent. get more than \$20 per week; in Boston, 6.4 per cent.; and in Brockton, none receive more than \$20. In Lynn, only 3.8 per cent. are getting less than \$8 a week; in Brockton, 7.3 per cent.; and in Boston, 14.9 per cent. are receiving less than that. In Brockton this is doubtless due to the restrictions which prevent the young worker from advancing, and in Boston it is probably due to the fact that the general level of wages in the shoe industry is low. These figures are for the whole group, regardless of whether the members are now in the shoe industry or not.

TABLE XXXVIII. — *Showing increases in wage over initial wage among shoe workers after one year in industry (64 cases).*

WAGE INCREASE.	Boys.	Girls.	Total.	Per cent.
Less than beginning, . . . . .	2	—	2	3.1
Beginning wage, . . . . .	10	18	28	43.7
\$1, . . . . .	9	4	13	20.3
\$2, . . . . .	3	6	9	14.1
\$3, . . . . .	2	4	6	9.4
\$4, . . . . .	—	5	5	7.8
\$6, . . . . .	1	—	1	1.6
Total, . . . . .	27	37	64	100.0

TABLE XXXIX. — *Showing increase in wage over initial wage among shoe workers after six years in industry (102 cases).*

WAGE INCREASE.	LYNN.		BROCKTON.		BOSTON.		TOTAL.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
Less than initial wage, .	2	4.1	2	6.2	1	4.8	5	4.9
\$1 to \$3, . . . . .	7	14.3	4	12.5	2	9.5	13	12.7
\$4 to \$6, . . . . .	11	22.4	14	43.8	1	4.8	26	25.5
\$7 to \$10, . . . . .	14	28.6	6	18.8	6	28.6	26	25.5
\$11 to \$13, . . . . .	5	10.2	5	15.6	6	28.6	16	15.7
\$14 to \$16, . . . . .	8	16.3	1	3.1	3	14.2	12	11.8
Over \$16, . . . . .	2	4.1	—	—	2	9.5	4	3.9
Total, . . . . .	49	100.0	32	100.0	21	100.0	102	100.0

These tables show an early advance to high earnings. In Brockton only 37.5 per cent. had increased their wage more than \$7 over their beginning wage; in Lynn, 59.2 per cent.; and in Boston 80.9 per cent. had done this. In Boston, if advance were impossible they left the trade; in Lynn they had advanced, but in Brockton a large proportion had not.

TABLE XL. — *Showing wages received in shoe industry after one year of service (based on data of 83 cases).*

WAGE RECEIVED.	Number of workers.	Per cent. of workers.
\$3 to \$4, . . . . .	11	13.2
\$4 to \$5, . . . . .	15	18.1
\$5 to \$6, . . . . .	20	24.1
\$6 to \$7, . . . . .	14	16.9
\$7 to \$8, . . . . .	12	14.5
\$8 to \$9, . . . . .	4	4.8
Over \$9, . . . . .	7	8.4
Total, . . . . .	83	100.0

In less than a year 27.7 per cent. were earning \$7 or more, but the majority were earning less than \$6. The wages in the shoe industry are high enough to content more than one half of the workers. Fifty-nine and six tenths per cent. were satisfied to stay in the shoe industry, 37.6 per cent. did not care for any change of employment within the industry, and 22 per cent. wanted to learn some good job in the shoe business. In Boston, only 5 wanted to learn another job in the shoe trade; in Brockton, 12, and in Lynn, 14, desired to do this, — a sequence which again corresponds with the opportunities in these cities. In Boston the young men aspire to 18 different trades, in Brockton to 10 and in Lynn to 8. Those in Lynn and Brockton tended toward other work with the hands, desiring to become electricians, mechanics, carpenters, etc. Those in Boston, because of the varied opportunities, had ambitions equally varied, some aspiring to be window dressers, buyers, physical directors, etc. Of those who had been at work one year 32.6 per cent. of the girls wanted to learn another job in the shoe trade, 24.4 per cent. wanted to go into business, to learn typewriting, stenography or bookkeeping, while 20.4 per cent. were satisfied as they were. Of the boys, only 18.4 per cent. wanted to learn some other job in the shoe trade, 9.2 per cent. wanted to go into business as clerks or bookkeepers, 9.2 per cent. wanted to become electricians, machinists, tool makers or printers. The rest were scattered, some desiring to be farmers, waiters, plumbers, designers, chauffeurs, etc., while a few wished to go to college.

Many have not been content merely to want to make a change. Of the twenty to twenty-one year old group, 29 from Boston, 55 per cent., had already left the industry, and 12, or 24 per cent., in Brockton had done this. For Lynn there are no data, but it is not likely that the percentage would be higher than for Brockton. This, too, indicates



that in Boston, where the opportunities are many, the worker who does not like shoe work, or who does not get on, leaves the industry. That he does not do as well as the one who stays on is shown by the table which includes his wages, bringing Boston down.

The investigation has shown that the shoe-factory workers are, as a group, intelligent and well educated enough to profit by part-time schooling; that they are in need of systematic training in their trade, and that those who are dissatisfied with the lack of opportunities to get out of it are, as a group, interested in advancing. It has further shown that the wages are high, and that it is therefore a trade which should be encouraged by the State.

## APPENDIX D.

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### APPRENTICESHIP.

#### I. IS THE ESTABLISHMENT OF AN APPRENTICESHIP SYSTEM PRACTICABLE?

Trades and occupations were formerly so organized that the individual worker was obliged to have a knowledge of the whole in order to succeed. This resulted in a system of training known as apprenticeship, which gave to the worker a knowledge of every part of the trade he intended to practice. In most cases, the master, with one or more apprentices, formed an independent unit of production. As time went on, these small units combined, and production on large scale, with extreme division of labor, has gradually resulted. This condition makes it no longer imperative that the individual worker, in order to earn a living, have a knowledge of more than one portion of the business. Where it formerly required an extensive period of training, from three to seven years, for a man to gain enough experience to become an independent worker, it may now require only a few days or weeks to learn one operation on a highly specialized machine. Formerly there was, as a rule, one apprentice or helper for every mature worker, who was responsible for his training. Modern conditions have practically eliminated the helper system, and where young people are employed it is either as independent workers in large groups responsible to one man, or as helpers to individuals on specialized employment. In either case, these young people come in contact with only a small portion of the business, and no one is directly responsible for their training. While the older system of apprenticeship was probably adequate to former industrial conditions, it would be wholly inadequate to-day, besides being a wasteful method of training. Men who know the whole business are fast disappearing, and complete industries cannot be learned from one man, but must be learned from several. Rule-of-thumb methods have been superseded by scientific methods, which make technical knowledge an absolute necessity for promotion.

To-day two types of workers are found, those with little initiative or little opportunity, who remain on unskilled jobs at low pay, and those with more force, or perhaps better opportunity, who become so-called skilled operatives. In one group studied (see page 51), 42

per cent., or nearly half, of those who have been at work for six years, and are now twenty to twenty-one years old, are still employed on unskilled work at a low wage, while the remaining 58 per cent. are working on what are considered skilled operations. Given the right opportunity and training, a young man can generally reach his maximum of speed and skill on a special operation at nineteen or earlier. The result is that about one half of the young workers become discouraged because of the lack of an opportunity to advance, and the rest, satisfied with a comparatively good wage, have their ambition and development arrested at too early a period in their lives, either for their own good or for the good of the industry. In either case, they have little opportunity to get the all-round experience in the business which makes for industrial intelligence, and a general understanding of the work upon which technical instruction must be based.

The changes in our method of manufacturing have made it easily possible for young people employed on specialized jobs to earn a much larger wage than those who are being trained by the existing system of apprenticeship, which aims at the ultimate efficiency rather than the immediate earning power of the apprentice. This condition makes it difficult to hold young workers to the completion of an apprenticeship in the face of the constant and insistent temptation to take specialized jobs at higher wages. Consolidation of industry and the development of specialized machines have made it impossible for the employer to train his young workers in this large way, even though he were willing to undertake such a responsibility in the stress of competition. Competitive conditions and production on a large scale mean that every foot of floor space and each valuable machine must be utilized to its full capacity at all times, and manufacturers do not feel able to curtail production in order to teach young people on these machines when they are likely to shift to another establishment presently and hire out as highly skilled operatives at an increased wage. Apprenticeship of the character formerly prevailing is so expensive that it has been quite generally abandoned. In a large factory, however, a teacher or workman can be employed to give his entire time to a group of boys, and where these boys are selected, the system can actually be made to show a profit to the manufacturer. With the exception of a few metal-working and printing establishments, apprenticeship is rarely found in connection with the industries studied, in the case of the employment of young persons from fourteen to seventeen years of age. Where employers claim that it still exists in their shops, they seldom show more than a method of training for one machine or one department. To give merely the ability to earn a living as an independent worker in most industries requires a comparatively limited knowledge of the business as a whole, and this instruction could be given in the shop or factory. Apprenticeship in this sense, however, involves such a short

period of training and is so narrow in its scope that it is not worthy of consideration. From the standpoint of general and industrial intelligence, of getting the best out of life, and of training possible future leaders, it is quite necessary to have an intelligent knowledge of the business as a whole.

Present conditions have made it more and more difficult to secure as workers persons who are interested in their work, who understand its relation to that of others, and who feel at all responsible for the success of the business as a whole. The most thoughtful employers feel that in the interests of industry something must be developed to take the place of the old apprenticeship system which will in a broad way make for a general understanding of the business. In this way the worker will see the relation of his work to that of his fellows, and will realize that imperfections in his work will cause trouble in succeeding operations, and make difficulties for other workmen, for the foremen and for the superintendent. Such general knowledge will make better workmen and at the same time will enable those with natural capacity for leadership to receive the kind of training which will make for promotion.

It is no longer possible for the shop alone to give such a broad training, but experience goes to show that it is possible, through part-time schooling, in which the shop or factory unites with the school in training the boy, to secure a better preparation for industry than the apprenticeship of former days could give. Employers have made determined efforts to maintain apprenticeship where there is the greatest need for men with all-round training and experience, but they have found it impossible to do this without an agency other than the shop. They have found that the related scientific and technical knowledge must be given in a school, and where the public schools have failed to do this, they have established schools of their own. There is every reason to believe that the adoption of a comprehensive plan of co-operation between the public schools and employers will bring back into industry the most desirable features of the old plan, viz., interest and responsibility for the welfare of the young worker, more favorable relations between the employer and the employee, permanency of employment and a means of imparting the best of all, — accumulated knowledge on the subject.

The impracticability of the apprenticeship system holds true in machine shops, as is evidenced by the report on the "Conditions in Machine Shops," found on page 65; also from the study of textile workers, of which the report on 150 boys in Lowell, on page 61, is typical. It is clear that the work in cotton mills of to-day is so specialized that an apprenticeship system would be of little use. It requires so short a time for the young worker to learn his work, usually from thirty minutes to eight hours, that there is no need for an apprenticeship system to help him in getting started in the mill. Help

is needed later, however, in the form of part-time schooling, to enable the boy to advance in the mill.

In the boot and shoe industry in some establishments apprentices are found in practically only one department, the cutting room. At the present time the usual way to learn the cutter's trade is to secure the employer's and union's permission to become an apprentice. Local unions have regulations concerning apprentices in other processes.

Three other ways of learning a skilled process in the shoe industry have proved to be more practicable, in spite of their limitations, namely, by attending a shoe-making school, by getting employment in an isolated factory or by "stealing" a trade.

In two of the largest shoe centers in the State six shoe schools were found and visited.<sup>1</sup> These schools are private enterprises, and are not favorably regarded by either shoe manufacturers or unions. Manufacturers claim that the pupils are poorly taught, and the present shoe workers do not wish to limit their opportunities in the industry by having a surplus of labor such as these schools might produce.

Those attending the schools are, to an increasing degree, of foreign birth, and many of them are only partly literate. Frequently they have been in this country only a few months and are thus anxious to learn a trade. The physical conditions in these schools are very much lower than those found in the ordinary shoe factory.

Only two of these schools teach most of the processes of the trade; two others give instruction only in stitching room operations, and the other two teach those processes peculiar to a "turned" shoe (one that is lasted wrong side out and then "turned"),—a process giving greater flexibility.

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<sup>1</sup> Abstract of study made by the Department of Research, Women's Educational and Industrial Union, which will be published in full later.

*Table showing processes taught and number of students learning each in four schools.<sup>1</sup>*

PROCESSES.	SCHOOLS.				
	A.	B.	C.	D.	Total.
Goodyear welting, . . . . .	18	-	-	-	18
Goodyear stitching, . . . . .	18	-	-	-	18
Rounding, . . . . .	10	-	-	-	10
Turn stitching, . . . . .	-	-	3	-	3
Rapid stitching, . . . . .	-	-	2	-	2
Edge trimming, . . . . .	30	30	2	-	62
McKay stitching, . . . . .	-	7	-	-	7
Heeling and slugging, . . . . .	8	-	-	-	8
Vamping, . . . . .	50	50	-	30	130
Cutting, . . . . .	-	9	-	-	9
Pulling over, . . . . .	35	35	-	-	70
Lasting on No. 5 machine, . . . . .	45	-	-	-	45
Skiving, . . . . .	-	-	-	11	11
Bottom finishing, . . . . .	-	-	-	-	-
Edge setting, . . . . .	25	25	-	-	50
Foxing and tip stitching, . . . . .	20	50	-	-	70
Top stitching, . . . . .	-	-	-	50	50
Turn lasting, . . . . .	-	-	-	-	-
Turning and beating out, . . . . .	-	-	-	-	-
Buffing, . . . . .	-	9	-	-	9
Scouring and breasting, . . . . .	-	9	-	-	9
Seaming and backstaying, . . . . .	30	-	-	-	30
McKay lasting, . . . . .	-	-	2	-	2
Nailing heel seats, . . . . .	5	-	-	-	5
Hand lasting, . . . . .	12	-	-	-	12
Leveling and stitch separating, . . . . .	4	-	-	-	4
Stitching linings, . . . . .	-	-	-	-	-
Patent leather repairing, . . . . .	25	-	-	-	25
Table work, . . . . .	150	-	-	-	150
	485	224	9	91	809

<sup>1</sup> The manager of the fifth school could not give numbers learning the different processes, but between July, 1911, and the first of February, 1912, the school had taught 300.

For teaching these different processes various sums are charged, from nothing in the case of table work to \$75 for Goodyear welting or stitching, according to the amount of training required. The amount of tuition also varies somewhat in the different schools, according to the grade of work for which the school trains.

Table showing processes taught and tuition for each by schools.

PROCESSES.	SCHOOLS.				
	A.	B.	C.	D.	E.
Goodyear welting, . . . . .	\$75	-	-	-	-
Goodyear stitching, . . . . .	75	-	-	-	-
Rounding, . . . . .	50	-	-	-	-
Turn stitching, . . . . .	-	-	\$50	-	-
Rapid stitching, . . . . .	-	-	50	-	-
Edge trimming, . . . . .	40	\$25	25	-	-
McKay stitching, . . . . .	-	35	25	-	-
Heeling and slugging, . . . . .	25	-	-	-	-
Vamping, . . . . .	25	20	-	\$25	\$25
Cutting, . . . . .	-	25	-	-	-
Pulling over, . . . . .	25	15	-	-	-
Lasting on No. 5 machine, . . . . .	25	-	-	-	-
Skiving, . . . . .	-	-	-	25	-
Bottom finishing, . . . . .	-	-	25	-	-
Edge setting, . . . . .	20	20	-	-	-
Foxing and tip stitching, . . . . .	15	10	-	-	-
Top stitching, . . . . .	-	5	-	15	10
Turning and beating out, . . . . .	-	-	15	-	-
Turn lasting, . . . . .	-	-	15	-	-
Buffing, . . . . .	-	15	-	-	-
Scouring and breasting, . . . . .	-	15	-	-	-
Seaming and backstaying, . . . . .	10	-	-	-	-
McKay lasting, . . . . .	-	-	10	-	-
Nailing heel seats, . . . . .	10	-	-	-	-
Hand lasting, . . . . .	10	-	-	-	-
Leveling and stitch separating, . . . . .	10	-	-	-	-
Stitching linings, . . . . .	-	-	-	-	5
Patent leather repairing, . . . . .	5	-	-	-	-
Table work, . . . . .	-	-	-	-	-

The teaching of the operations studied by boys usually costs more than the teaching of those which girls learn. No operation open to women costs more than \$25, while men must pay up to \$75.

*Table showing processes taught men and women, and tuition, based on the statements of managers of five shoemaking schools.<sup>1</sup>*

PROCESSES.	PUPILS.		Tuition.
	Men.	Women.	
Goodyear welting, . . . . .	X		\$75
Goodyear stitching, . . . . .	X		75
Rounding, . . . . .	X		50
Turn stitching, . . . . .	X		50
Rapid stitching, . . . . .	X		50
Edge trimming, . . . . .	X		25-40
McKay stitching, . . . . .	X		35
Heeling and slugging, . . . . .	X		25
Cutting, . . . . .	X		25
Lasting on No. 5 machine, . . . . .	X		25
Skiving, . . . . .	X	X	25
Bottom finishing, . . . . .	X		25
Vamping, . . . . .	X	X	20-25
Pulling over, . . . . .	X		15-25
Edge setting, . . . . .	X		20
Foxing and tip stitching, . . . . .	X	X	15
Turn lasting, . . . . .	X		15
Turning and beating out, . . . . .	X		15
Buffing, . . . . .	X		15
Scouring and breasting, . . . . .	X		15
Top stitching, . . . . .	X	X	5-15
Seaming and backstaying, . . . . .	X	X	10
McKay lasting, . . . . .	X		10
Nailing heel seats, . . . . .	X		10
Hand lasting, . . . . .	X		10
Leveling and stitch separating, . . . . .	X		10
Stitching linings, . . . . .	X	X	5
Patent leather repairing, . . . . .	X	X	5
Table work, . . . . .		X	-

<sup>1</sup> Six schools were found, but information could be obtained from only five.

As the amount paid for learning a process is based upon the amount of skill necessary, which in turn determines the wage, it can be seen that those processes requiring the most skill and paying the best wages are open only to men.

On the other hand, while a boy commonly learns only one process in a school, a girl may and often does learn several. For example, a boy who



attends a school to learn Goodyear welting is put immediately upon that process, and learns that one operation only, while a girl who enters to learn vamping is started on the simpler stitching operations, such as stitching linings, backstaying and other top-stitching processes, before she is finally put on vamping. Thus, when she has finished her course, she knows several processes in addition to the one she set out to learn.

While all instruction is individual, yet the training received is often of little value beyond learning how to run a power machine, and the worker finds he has a "lot to learn" when he goes to a factory. The instructors in these schools supervise the work done by the students only after they have once been taught to operate a machine. The managers of the schools make practically no effort to place their pupils. The fact of having attended a school usually works negatively when looking for work, as foremen do not like to hire workers who have learned their trade in a shoemaking school. They prefer absolutely unskilled workers, as those who have attended the schools have not been carefully taught. One superintendent denounced the schools as money-making schemes, and claimed that if there was a rush of students at one of these schools, the old pupils were frequently asked to leave and make room for the new students, although in some instances they had not fully learned the processes they were studying. As the number of workers these schools place in the trade each year is very small, the schools do not play an important part in training for the industry.

In a few cases the foreman may train young workers if they start in small or isolated factories. For example, in one large isolated factory a regular system of training is maintained. Boys and girls are employed at fourteen years or older and are taught simple processes. If they wish to learn more skilled operations, the firm grants them permits, and they may use their lunch hours or dull seasons to acquire the necessary information. Instruction is given by foremen, friends or other workers.

One drawback to being taught in the factory is that the young worker has usually less choice in the operation he may learn than has the boy who teaches himself or "steals" his trade. The foreman considers that he is a better judge of the worker's capacity, and he usually puts the boy on the work where he happens to be short of help, regardless of the feelings or capabilities of the young worker. A large proportion of these young "learners" do not stay long enough to complete their training. They are advanced so slowly that they lose courage, and leave to try their luck at "picking up" or "stealing" a trade in another factory, which makes no pretence of giving training.

But the young workers who attend shoe schools or receive regular training in factories form only a small proportion of those learning the trade at any given time. The general method of training is for a

young worker to begin on such unskilled work as pasting, trimming ends, match marking or running errands. He may improve any opportunity he has to watch a machine in operation, ask questions of the worker and finally try running the machine when he has a chance. In due time the would-be skilled operator will have acquired considerable knowledge of his pet process, and although the foreman would not think of advancing him for some time to come, he soon leaves and secures a job elsewhere as an "experienced worker" on the process he has so haphazardly "picked up." If he can "bluff" the job while acquiring the "fine points" he is all right, otherwise he must travel the rounds of shoe factories, spoiling material and perhaps injuring machines until he has learned enough to hold a job.

Boys have more difficulty than girls in learning skilled processes. Unions for men require that a man shall have worked at his new trade for six months before he is permitted to join the union, and two friends, members of the union, must vouch for the fact that he has fulfilled the requirements. With girls, however, there are no special requirements before they can become members of the union. In addition, foremen say that women are more likely to help young girls than men are to aid boys. Hence one frequently sees a woman showing a girl who runs errands and hunts lost shoes how to stitch backstays or undertrimming, and in a short time the girl will be found stitching backstays while her brother is still working at his first unskilled job.

Thus the girl has an easier time in advancing to skilled work, whether she receives instruction in a school or in the factory. The boy must pay a much larger sum to learn one of the most skilled processes in a shoemaking school, or, if he tries to "steal" his trade in a factory, he finds many of the older men opposed to his advancement, a few going so far as to remove parts of their machines before they leave.

While the young worker who "steals" his trade has a better chance of selecting the process he likes best and of advancing to that operation sooner than does the one receiving training in an isolated factory, yet his success depends entirely on the amount of initiative he has. He must not only select the process which is to be his goal, without advice as to the kind of work for which he is best suited, but he must learn that process by overcoming many obstacles in the form of opposition on the part of his employer, the union and his fellow workmen. To win success under these difficulties a large amount of ambition, initiative and grit are the necessary requisites, and the boy or girl who is a faithful, plodding worker but yet lacks the necessary "push" must, under the present conditions, forever remain in the second-rate positions in shoe factories paying only small wages. All they need to enable them to advance to the most skilled processes is a chance to learn these processes such as part-time schools would offer.<sup>1</sup>

<sup>1</sup> For a comparison of the difference in wages at successive ages between boys having shop training and technical school training see chart on page 67 and tables on pages 68 and 69 of Douglas report, 1906, on "Industrial and Technical Education."

The following questionnaire was used in connection with unions to find out the number of apprentices in the boot and shoe industry. A number of unions having as many as 1,800 members report no apprentices.

# COMMONWEALTH OF MASSACHUSETTS.

STATE BOARD OF EDUCATION,

FORD BUILDING, BOSTON.

FORM 8.

Name of union. "Boot & Shoe Workers, Local 191." City.....

Number of men belonging to union. "About 300."

Total number of apprentices. "Approximately 15."

What is the proportion of apprentices to workmen allowed by the union?  
"There is no established rule."

Is this rule one which is adhered to in all cases, or are special contracts made to suit varying conditions? "In this locality we enter into special agreements to fit the case."

How long is it considered necessary for an apprentice to serve in this branch of the trade, or what is the period of apprenticeship? "Two to three years."

At what minimum age are apprentices taken? "16."

Is a wider knowledge of the business considered necessary for efficient work in this branch of the trade? "Yes."

Would such knowledge mean promotion in the business? "Yes."

Remarks: "The young men employed as trimming cutters are sometimes known as apprentices as they are generally promoted to journeymen cutters from that branch."

# COMMONWEALTH OF MASSACHUSETTS.

STATE BOARD OF EDUCATION,

FORD BUILDING, BOSTON.

FORM 8.

Name of union. "Goodyear Operators Independent Union." City.....

Number of men belonging to union. "290."

Total number of apprentices. "8."

What is the proportion of apprentices to workmen allowed by the union?  
"One desiring to learn this branch of shoemaking requests permission of union. If we are unable to supply skilled help, permit is usually granted."

Is this rule one which is adhered to in all cases, or are special contracts made to suit varying conditions? "No contracts made."

How long is it considered necessary for an apprentice to serve in this branch of the trade, or what is the period of apprenticeship? "At least six months."

At what minimum age are apprentices taken? "18."

Is a wider knowledge of the business considered necessary for efficient work in this branch of the trade? "Yes."

Would such knowledge mean promotion in the business? "Naturally."

Remarks:

The following is a study made of a large shoe factory which gives special care to the training of young workers: —

1. *At what age are they admitted to the factory?*

Fourteen years and upwards.

2. (a) *To what kind of occupations are they admitted upon entering the factory?*

<i>Boys.</i>	<i>Girls.</i>	<i>Boys and Girls.</i>
Dinkers.	Bow makers.	Messengers.
Trimming cutters.	Pressers.	Station workers.
Pattern boys.	Reinforcers.	Cementers.
Welt pounders.	Upper blackers.	Edge blackers.
Welt beaters.	Thread trimmers.	Heel blackers.
Heel seat tackers.	Match markers.	Office workers: —
Heeler boys.	Taggers.	Checkers.
Sluggers.	Heel piece placers.	Addressers.
Assemblers (last room).	Lacers.	
Rack boys.	Buttoners.	
Last boys.	Tip fixers.	
Stampers.	Edge brushers.	

(b) *At what age are they admitted to the different occupations?*

There is no particular age for entering any occupation.

3. *Are they trained for the work of a machine or in a process while they are engaged in unskilled occupations, or do they enter upon the work at such machines when they begin their employment?*

A few receive permits which enable them to learn a skilled operation when work is slack or at lunch hour, but usually the worker is transferred at once to the job which he is to learn.

4. *Are any or all of them trained by instruction at machines before they enter the factory on the wage-earning basis at all?*

No. They earn from the beginning. They are supposed to be on piece wage, but as they cannot make a fair wage at the start, the company makes it up so that each worker has at least \$3.50 a week.

5. *Is the time devoted to their training at the work given at the expense of the company or at the expense of the worker?*

All young workers are trained at the expense of the company. Older men occasionally work without pay in order to learn a new process. The company allows this when it is short of help in these operations.

6. (a) *If the worker who is engaged in unskilled work in the factory wishes to advance, is he required to devote a portion or all of his time for a given period to training for a better job?*

No.

(b) *Or may he divide his time working part time in his wage-earning occupation and spend part time training for the new work?*

Yes, if he has a permit and his own work is slack. If he is busy he can give no time to learning except lunch hour. A permit is given to a boy or girl who (a) lives in the neighborhood; (b) shows talent; (c) is anxious to learn.

7. *Is the helper system employed as a cheap method in training the worker? By helper system is meant a scheme whereby an operative who already knows the machine instructs the new person.*

This is the most economical method and is used when only a few workers are being trained. When a large number is taken on, the foreman or a regular teacher—if the foreman is too busy—gives the training. The teacher is taken from the operators, is paid about \$20, and when the training is over goes back to the machine.

8. *Are extra supervisors or teachers or certain foremen or assistants and second hands assigned to the duty of training the new workers?*

Yes. If the foreman is free to teach, he does so, otherwise a teacher must be chosen from the operatives.

9. *How long does it take to give the necessary preliminary training to the new worker? It is suggested that the answer to this question will probably have to be made by different machines or processes rather than in any form of general statement.*

The time taken to learn various processes ranges from ten minutes to some months. Such jobs as errands, pressing and cementing are learned at once. Beginners are not put on machines unless help is needed; such processes as skiving might take as long as two months. It is impossible to give even the approximate time of learning as it varies so much with every beginner.

10. *To what extent does the time necessary for the training of the worker vary, according to the kind of machine or process, the age of the worker, the intelligence of the worker and the aptitude of the worker for the job?*

The time varies indirectly with the intelligence and aptitude of the worker for the job and directly with the age. In all processes that are not too complicated the very young workers learn most quickly; they are more impetuous and less afraid of accidents, and are swift in their motions. If not impeded by overcrowding or other causes, an intelligent worker can reach his best work as early as nineteen.

11. *Are the regular machines on the floor of the shop used for the training of the worker or are special machines set apart from time to time, at least for the task?*

Formerly the company ran a kind of kindergarten in a special room, but now the learners go in line with the regular workers.

12. *Is the worker trained on an exercise or on a productive basis?*

Productive.

13. *If on a productive basis what is done with spoiled work?*

It is if possible repaired, if not, thrown away. Very little material is spoiled, as learners are not put on a job that is too difficult for them.

14. *What arrangement, if any, is made for giving the worker any pay for the output of the process carried on during the training?*

Credit is given on piece basis for work done. As this means a very low weekly wage for some weeks, the company makes it up to the extent of \$3.50 to \$5 for girls and \$5 to \$6 for boys, according to the difficulty of the operation. Occasionally it happens that a man worker is badly needed for a skilled operation, in which case he is paid at the rate of \$12 a week while learning.

15. *In training the worker for the new position which of the following points or factors are dealt with and to what extent?*

All these factors are taken into account. There is no scientific management in the sense of analyzing the various movements and eliminating unnecessary ones.

(a) *Manipulative skill.*

The fastest worker is regarded as the one who has most manipulative skill. He is taken from the machine occasionally to show the other workers how to acquire speed and handle material deftly.

(b) *Speed and output.*

The young learners are discouraged from speeding at the start. Their one aim is to avoid mistakes, and no attempt is made at speeding until the work is perfect.

(c) *Elimination of waste.*

There is little danger of waste as the learners handle only small pieces of material which have been previously cut.

(d) *Safeguards against seconds.*

A learner is rarely put on a job until he has proved himself able for it, so that he spoils comparatively little.

(e) *Prevention of accidents.*

Very few machines are at all dangerous, and the learner is shown the parts of the machine which may be dangerous.

(f) *Information about material dealt with and how to deal with it.*

(g) *Scientific management in so far as it relates to the elimination of unnecessary movements and awkward movements in the work.*

16. (a) *To what extent is there any system in use whereby operatives who show skill at one machine acquire an opportunity to secure practice at other machines?*

It is the aim of the company that their operatives shall be able to run several machines. It is always made clear to the young people that any one who is anxious to learn and get a better job can do so. Skilled jobs are *always* to be had. When the foreman notices that a learner is bright he asks him if he is anxious to learn some other operations. If he is, he receives a permit. He can often select the operation in which he wishes to be trained, but on the whole the workers show very little discrimination in choosing jobs for which they are adapted.

(b) *To what extent, while this is being done, does this skilled operative seeking skill at another machine receive oversight and instruction?*

One of the older workers is usually made responsible for the work on his line, and he frequently examines the learner's work.

17. *What arrangement, if any, is made for the previous training of those who are especially set aside or given the task of training others? In other words, to what extent does the plant train its own teachers or foremen?*

None. The foreman talks with a worker whom he selects as teacher and explains to him what he wants done. It is assumed that the best operator will make the best teacher. If he does not make good, another operator is chosen and he returns to his machine.

18. *Which of the following aims has the firm in view in its present scheme of training its operatives? Importance of each.*

*a, d, e, and g* are the most important aims in the training; *g* is probably the most important of all.

(a) *The attracting of desirable workers to the plant.*

The fact that the workers know they can learn in a shop is a powerful inducement to their coming.

(b) *The making of some undesirable workers at the outset into desirable workers.*

This is very rarely done, if at all.

(c) *The utilization of women and children to an extent not usually found in a shoe factory.*

On the contrary, women and children are less utilized than in other shops.

(d) *The obtaining of a class of workers who, because of training, can be utilized at a number of different machines or processes.*

This is one of the company's chief aims. (See 17 a.)

(e) *The securing of greater speed and a larger output on the part of the worker.*

The company believes that workers who are carefully taught at the beginning must ultimately arrive at a greater speed than the worker who picks up his trade and has never been corrected, though he may work in a roundabout way.

(f) *The acquainting of the worker with more activities of the factory to make him business wise or industry wise.*

This is done, but to no very great extent. The worker is shown, however, what opportunities there are for a boy or girl with ability.

(g) *The laying of the foundation, particularly in the case of boys, of a knowledge of the factory that will bring about after a while a desirable type of second hand, assistant and foreman.*

This has always been aimed at and has been proved successful. Every foreman in the factory is an old employee of the company. In no case has it been obliged to bring in a foreman from outside. Almost all the heads of the firm as well as the foremen have been with the company since they were boys. The president worked for many years in the office and the vice-president was formerly a salesman.

19. *Are there any methods of scientific management of the factory, organized division of labor, utilization of schemes, safeguards against waste, etc., that are peculiar to the factory and that have made the scheme of training practically necessary or desirable?*

There is no scientific management in the sense in which it has been introduced into other factories. The firm believes that the best way to secure good work is by removing all inefficient workers, and thus keeping the standard high. The foremen and department superintendents have decided, after long experience, what each job is worth. A job, for instance, ought to bring a good operator \$25 a week. If he falls below this constantly, the foreman examines his case, and when he finds that the workman, through his own inefficiency, is not able to keep pace with the others, he removes him to some easier job.

20. *In the opinion of the company is the present scheme of training workers proving to be profitable?*

Yes.

*(a) Do they give the company more efficient work?*

Yes. Workers who are carefully taught must necessarily be more efficient than people who steal their trades.

*(b) Can skilled help be secured for a lower wage in this way?*

No, for employees who have been trained in the shop work side by side with the workers who come from outside.

*(c) Are they loyal to and do they remain with the company?*

On the whole, yes; but there are many exceptions. A great many leave before they have been really taught. Of those who learn, from one third to one half remain, while a fair number come back again after working for a few years in other places.

*(d) What is the attitude of the older workers to the training of these apprentices?*

As a rule, the training is taken as a matter of course. In a few highly paid jobs the men resent the training, though not very actively. Their resentment is shown by unwillingness to help the young worker, and occasionally by putting obstacles in his way. The reason for this is to prevent an oversupply in the highly paid jobs.

21. *What operations are performed by women and boys in this factory that are performed by men at the union wage in other factories?*

This cannot be answered accurately. The firm believes that women are employed on fewer operations than in many union factories, and in much fewer than the nonunion shops. Women do ironing in a great many shops but here it is done by men. Rooms in which women work: stitching room, casing-up room, sole leather room, bottoming room, edge trimming room. Rooms in which women do not work: lasting room, ironing room, welt room.

22. *By what device, if any, are the most efficient and brightest hands trained for jobs which offer opportunity for higher skill and promotion?*

The brightest operators are given permits to learn a skilled operation. If there is need of help in the latter operation the foreman or teacher trains the learners, if not, the learner arranges with some other worker (usually a particular friend) to teach him at odd times. Sometimes the learner pays a worker to teach him, but this is very rare. (Amount paid not known.)

23. *Does the system in use at the ——— factory allow for promotions of those hands who demonstrate their ability to jobs of a higher earning capacity than those which they are now occupying?*

As workmen in the high-priced jobs leave from time to time the firm always tries to fill their places with its own employees instead of bringing in help from outside. It is impressed upon all young workers that there are always good jobs waiting if they will train for them.



## APPENDIX E.

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### PRACTICABILITY OF PART-TIME SCHOOLING.

#### I. STANDPOINTS FROM WHICH IT IS CONSIDERED.

In the present discussion, the practicability of part-time schooling is considered from three points of view. (1) From the standpoint of the workers: (a) Are they capable of being educated so that they can profit by the instruction and training offered? (b) Will such training help them in the industry? (c) Is their economic condition such that they can stand a possible reduction in wage while taking the work? (2) From the standpoint of school organization: (a) Can a school be so organized as to give training which will help workers to better their condition in the industry? (b) Can it give training which will broaden the outlook of the workers along social and civic lines? (c) Can enough time be taken from the industry to make such teaching practicable? (d) Can teachers be secured? (e) Can the proper equipment be obtained? (3) From the standpoint of the organization of industry: (a) Can time be taken during the working hours for attendance upon a school? (b) Can the work done by young people be so arranged that two can work on the same job, and can the extra help necessary to inaugurate a plan of part-time schooling be secured? (c) Will school training aid the industry? (d) Will employers co-operate?

It is very difficult, if not impossible, to answer these questions on a statistical basis. Figures which show the number who say that they would attend such courses are unreliable and at best only a rough indication of the attitude of the workers. Some schools are already giving satisfactory training along a number of different lines, but only further experiment can determine how successfully they can do work along other lines.

#### II. ATTITUDE OF EMPLOYERS.

One of the most important considerations in the working out of this problem is the willingness of employers to co-operate with the school. Experience in the development of this work during the past five years has shown that at first comparatively few employers are ready to so co-operate, but after a school has demonstrated its value, the majority of the manufacturers are disposed to organize their business in such a way that they can allow their young workers time to attend the part-time school. The following table shows the attitude of 71 employers towards a plan of part-time schooling. The great majority of these

avored the alternating weekly plan on a half-time basis. An exception to this is found in the case of department stores, where the only plan submitted was for a period of eight hours per week.

TABLE I. — *Attitude of manufacturers toward plan of part-time training.*

INDUSTRY.	Time for school work proposed.	Number in favor.	Number opposed.	Total.	Percentage in favor.
Department stores, . . . .	8 hours per week,	10	—	10	100
Printing, . . . . .	Half time, . . . .	9	1	10	90
Machine work, . . . . .	Half time, . . . .	16	3	19	84
Shoe manufacturing, . . . .	Half time, . . . .	10	3	13	77
Bookbinding, . . . . .	Half time, . . . .	2	4	6	33½
Textile work, . . . . .	Half time, . . . .	3	11	13	27

The above table seems to show that where skill and training are required the manufacturers are, on the whole, in favor of co-operating with the school. The plans submitted suggested the alternating weekly scheme. The form of schedule used is found on pages 108 and 109, "Shoe Study."

It will be noted that all of the department-store employers were in favor of the plan, which may indicate that the inquiry was confined to those stores which had had experience with this kind of work or were familiar with what has been done in other stores.

One printing establishment is recorded as opposed to the plan, and in this case the chief objections given were two: the difficulty of arranging shifts because of the great amount of individuality required in the work; and the fear that a public school could do no really practical and helpful work to aid the printing industry. The favorable attitude on the part of the other 9 was due to at least three causes: (a) a realization of the fact that some of the training given in the regular public schools now is of value in the printing business, and that a course of study planned for the particular industry would be of greater value; (b) printing is not a large child-employing industry; almost all of the young workers enter at seventeen years or older, and are obliged to spend a year in the business before they become valuable workers; if young people were to enter the industry at fourteen or fifteen years of age on a half-time basis, spending the other half of their time in a vocational school, at seventeen years of age their services would be decidedly more valuable than is the case at the present time; in addition, their capacity for growth and development in the industry would be increased many fold; (c) the difficulty of giving in the printing office the proper instruction to the new workers.

In machine shops only 2 out of 19 to which agents were sent were opposed to the plan. In this industry it has been demonstrated beyond a doubt that a plan of part-time schooling will receive the hearty support of the manufacturers when they have learned what the school proposes to do and it has proved that it can do it.<sup>1</sup> All those who were opposed had had no experience with part-time training. Some of those who expressed themselves enthusiastically in favor of a plan of part-time training were opposed to such a plan when approached during the previous study made by the Commission on Industry and Technical Education.

A great majority of the shoe manufacturers who were interviewed are in favor of the plan; yet they have had no experience whatever along these lines, and the work offered abroad gives nothing in the way of experience from which they can draw conclusions. They do, however, know that a number of workers have gone to Germany and received valuable all-round training for the shoe business, and they are heartily in favor of any scheme which would approximate the same kind of instruction.

The majority of the employers running bookbinding and textile establishments were opposed to the plan. The binding trade is so small that this opposition need be given little weight. The textile industry, on the other hand, is the largest child-employing industry in Massachusetts, and those who are recorded in favor of a half-time plan favored it for selected groups, not for the young textile workers as a whole. Five representatives of the textile industry in Lawrence stated that they were willing to take all the boys the schools would send them on a half-time basis, so that these boys might continue their general and special education while in school, and so that the mills would have this additional amount of help, with the possibility that a few might continue in the mill business.

### III. EFFECT ON THE INDUSTRY.

#### *Department Stores.*

In department stores only 2.5 per cent. of the total number of workers are estimated as being under seventeen years of age. With the plan worked out in the Women's Educational and Industrial Union school for salesmanship, only a slight increase in the working force, if any, would be necessary. If efficient work is done with these people while attending school there should be no economic loss to the industry if time for such training is allowed without any reduction in pay. In fact, it has been demonstrated that it is a paying proposition for the firms to allow this time to be taken.<sup>2</sup>

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<sup>1</sup> See Appendix E, and opinions of manufacturers, pp. 117-119.    <sup>2</sup> See Appendix G, p. 147.

*Printing and Publishing.*

It is estimated that in printing and publishing establishments about 4 per cent. of the total number of workers are under seventeen years of age. The work is individual in its character, and in a rough way may be compared with certain establishments in the machine industry, where successful work in part-time instruction has already been done, and it will be no more difficult to work out a plan of part-time schooling for this industry than for the machine shops. Enough work has been done in the teaching of printing and related subjects to demonstrate that training can be given in the school which will make the boy more valuable to the employer. This is illustrated by the fact that it is difficult for one school which is now operating both a full-time and part-time printing course to keep the boys in school after they have had a year's training, as they are offered unusually high wages in the trade, which attract them from the school.

*Machine Industry.*

The statistics available would seem to indicate that only about 2 per cent. of those employed in machine shops are under seventeen years of age. Judging from the numbers actually found in certain machine shops during this investigation, and from other studies, it is apparent that this percentage is much too small to represent the true number.<sup>1</sup> The class of work is such that it is much more difficult to so arrange that one worker shall take up and carry on the work of another than in such an industry as textiles, but the value of the training given has been found to more than compensate for the difficulty of making the arrangement. Many employers are disposed to give five hours a week without a reduction in pay, as they believe that in the end they will get more intelligent and efficient service.

*Shoe Manufacturing.*

In the shoe industry the percentage reported under seventeen years of age is 5.6, but this will vary very much with the community. Unionized centers and factories doing the highest grade of work have a smaller percentage than the nonunionized centers and the ones in which a cheaper grade of work is done. In either case there is a disposition on the part of the manufacturer to co-operate.<sup>2</sup>

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<sup>1</sup> In the city of Quincy alone, which cannot be considered a machine center, 229 workers between fourteen and seventeen years of age were employed in machine shops, almost one third of the total number.

<sup>2</sup> See chapter on "Apprenticeship," and p. 107.

*Bookbinding.*

Sixteen per cent. of the total number employed in bookbinding are under seventeen years. The trade is, however, so small by comparison with many of the others that there should be little if any difficulty in getting enough young workers to take the places of those who are attending school. In the case of girls there would be little if any advantage to the industry from a plan of part-time schooling. In the case of boys, a general training such as might be given for a machine trade would be of considerable advantage in the understanding of operations and maintenance of machines. The largest establishments in this industry seem to be undergoing a change, and substituting rather complicated machines to do much of the work formerly done by hand.

*Textile Industry.*

In the textile industry the per cent. of workers under seventeen years of age is 9. The supply of young help is apparently insufficient for a half-time plan. It is believed, however, that a half-time plan to continue the general and vocational education of a considerable number of young people could be operated without any detriment to the industry; in fact, it will be an advantage to the industry to get the additional amount of help. There are probably enough young people idle to fill the places made vacant by having the workers in this industry attend school from five to eight hours per week, possibly longer.<sup>1</sup>

TABLE II. — *Number of children 14 years of age at work in cotton mills of Fall River from truant officer's report, and number of children granted age and schooling certificates to work in the same cotton mills for the same year.*

MILL.	Truant officers' report of number at work, 14 years of age. 1.	AGE AND SCHOOLING CERTIFICATES.	
		14 years, 3 months and under. 2.	Over 14 years, 3 months and under 15. 3.
No. 1, . . . . .	35	9	5
No. 2, . . . . .	19	37	12
No. 3, . . . . .	6	11	1
No. 4, . . . . .	1	15	4
No. 5, . . . . .	4	21	5
No. 6, . . . . .	12	17	10
No. 7, . . . . .	26	51	10
No. 8, . . . . .	13	24	9
No. 9, . . . . .	3	2	3
No. 10, . . . . .	15	20	7
No. 11, . . . . .	2	20	1

<sup>1</sup> See number and age of schooling certificates granted and number actually employed in different cities for the same ages. Table II., Appendix A, and Table II. of this appendix show that about one half as many between fourteen and fifteen years of age are employed as there were schooling certificates granted for the different mills in Fall River between these ages.

TABLE II. — *Number of children 14 years of age at work in cotton mills of Fall River from truant officer's report, and number of children granted age and schooling certificates to work in the same cotton mills for the same year — Concluded.*

MILL.	Truant officers' report of number at work, 14 years of age. 1.	AGE AND SCHOOLING CERTIFICATES.	
		14 yrs, 3 months and under. 2.	Over 14 years, 3 months and under 15. 3.
No. 12, . . . . .	12	20	4
No. 13, . . . . .	2	14	3
No. 14, . . . . .	10	26	9
No. 15, . . . . .	—	2	1
No. 16, . . . . .	5	6	1
No. 17, . . . . .	Ages not given	103	27
No. 18, . . . . .	17	29	4
No. 19, . . . . .	3	2	—
No. 20, . . . . .	104	71	11
No. 21, . . . . .	37	51	5
No. 22, . . . . .	8	23	4
No. 23, . . . . .	10	17	4
No. 24, . . . . .	5	—	—
No. 25, . . . . .	23	23	2
No. 26, . . . . .	18	58	8
No. 27, . . . . .	9	16	5
No. 28, . . . . .	17	11	2
No. 29, . . . . .	4	11	2
No. 30, . . . . .	6	—	—
No. 31, . . . . .	9	34	10
No. 32, . . . . .	10	32	4
No. 33, . . . . .	9	17	5
No. 34, . . . . .	7	29	10
No. 35, . . . . .	18	20	2
No. 36, . . . . .	13	28	5
No. 37, . . . . .	2	12	2
No. 38, . . . . .	12	20	5
No. 39, . . . . .	17	31	5
No. 40, . . . . .	13	20	4
No. 41, . . . . .	Ages not given	30	4
No. 42, . . . . .	11	16	8
Totals, . . . . .	547	999	223

This table shows that less than one-half as many are employed as hold age and schooling certificates.

#### IV. PREVIOUS EXPERIMENTS IN PART-TIME SCHOOLING.

##### *Department Stores.*

Part-time schools have been operated for periods of from five to eight hours each week in connection with department stores in the following places: Boston, co-operating with the school for salesmanship of the Women's Educational and Industrial Union and the Boston public schools, Chicago, Cincinnati, Cleveland, Kalamazoo, San Francisco, and the Wanamaker stores of Philadelphia and New York.

*Printing and Publishing.*

Part-time work on the alternating half-day plan is successfully operated in one of the large printing houses of Chicago. A plan of spending three days in the school and three days in the print shop has been working for a year in Newton, Mass. In Cincinnati, 40 boys from printing offices are attending a part-time school five hours per week.

*Machine Shops.*

Classes on a half-time basis have been successfully operated in Cleveland and Cincinnati. The Cincinnati machine shops have also been sending 300 apprentices to a part-time or continuation school for a period of five hours per week. The school operated in Beverly is conducted on the half-time plan, and the shop work done in the school is a part of the productive work of the factory. Similar work is being done in Newton, Quincy and Worcester, and plans are being made to operate other classes in Illinois, Waterbury, Conn., and other places.

*Shoe Manufacturing.*

As yet there have been no part-time experiments in connection with shoe manufacturing. Schools giving training similar to that suggested in the programs, Appendix F, have been successfully operated in Wernelkerchen, Prussia, and in England. The majority of the foreign part-time schools are for "hand shoe workers." See Appendix D, on "Apprenticeship."

*Textile Industry.*

The half-time schools in England take children under fourteen years of age employed in the textile industry. The instruction is general rather than vocational in its character, and from the standpoint of the school is unsatisfactory. In Fitchburg, Mass., one textile establishment has 12 boys on a half-time alternating weekly plan. In Lowell a number are attending a school on Sunday afternoons. This is here classed as continuation school work rather than as part-time instruction, because no time is taken from the working day.

*Candy Making.*

The only part-time or continuation school work done in connection with this industry is found in the continuation school department of the Boston public schools. Ninety girls employed in candy-making establishments are attending these schools four hours per week during working hours. When the manufacturers consented to send girls to these schools they felt that they would be compensated for the time taken for school work by better and more interested service when the girls returned to the candy factory, even though the work given, which

is along the line of training for the home, personal hygiene, etc., has no direct relation to the work of the factory. At any rate, they are willing to give up the time and charge it to welfare work if it is a complete loss to the factory.

#### *Other Industries.*

Half-time plans have also been operated in the following lines: general office work, including filing, shipping, billing, etc., pattern making, drafting, iron moulding, tinsmithing, saw making and carpentry. A class in brick laying and carpentry has attended school full time for a portion of the dull season each year for a period of six years in the city of Chicago. Arrangements have been already made to conduct classes in the following lines of work on a half-time basis: belt making, electrical work, automobile and carriage building, ship caulking, plumbing, blacksmithing, coppersmithing, steam fitting, riveting, sheet-iron working, and the operation of power sewing machines.

One of the most difficult problems which the part-time school will have to work out is the program of training for the small community with only a few young workers in each occupation, and for the group in larger places, made up of a few workers from miscellaneous occupations. It is difficult to see how such training can to any extent be vocational in its character, since few, if any, of these people will have a common experience or common needs. It therefore seems that the only possible work which can be offered for such classes will be along the line of general or liberal training if they are at all likely to stay in their present occupation. With such classes in the city, it should be possible to find teachers who are sufficiently skilled to be able to use the practical experience of the individual as a basis for teaching, and show how the fundamental subjects of reading, writing and arithmetic, and training in citizenship, can be applied to every-day life. With such classes in small communities, the teaching problem is very much more difficult than in the city, and it will be almost impossible to secure competent teachers for the amount which is usually paid.

#### V. ATTITUDE OF THE WORKERS.

The experiment conducted in connection with the department stores in the school for salesmanship of the Women's Educational and Industrial Union and the Boston public schools shows that the young workers affected are almost universally in favor of taking part-time schooling. Many cannot afford, however, a reduction in wage, but the department stores have so far been willing to give them the time without such reduction, and it is believed that if the public school will do efficient, thorough work, the management of the department stores in general will co-operate.



Very little data for the printing and publishing industry are available, but the few boys who have started printing courses in the all-day vocational schools have, whenever they have obtained a position on a part-time basis, been glad to continue in the school, sacrificing one-half of their earnings for the privilege.

Those employed in the machine shops can well afford a reduction in wage sufficiently large to enable them to attend one half the time. They realize the need of this work and wish to do it. The exception to this is found where boys are employed as specialists on different machines in shops where they are not given the opportunity to change to other machines, and so use the knowledge gained in the school.

The young people employed in shoe manufacturing can afford a reduction in wages, and the majority seem to realize the need of training and want it. Thirty-seven and one half per cent., however, do not want such training, and would not be willing to make the sacrifice in wage.

In the textile business children could afford some reduction in wage. They are about equally divided on the question of the desirability of part-time schooling. Forty-six per cent. of those investigated were not in favor of any form of part-time schooling, while 54.1 per cent. did want vocational training for the mill or for some trade outside of the mill.

Workers in the candy factories, especially, cannot afford a reduction in wage. Fifty-two per cent. of the candy workers were not interested in any form of training. Forty-eight per cent. wanted to learn some trade outside of the confectionery establishment.

## VI. DETAILED CONSIDERATION OF INDUSTRIES.

### *Boot and Shoe Industry.*

In 1908, practically all the important shoe manufacturers of Lynn declared themselves willing to assist any form of part-time vocational school, but preferably one conducted on an alternating weekly plan, with provision for full time in the factory during seasons of rush. Of the 24 manufacturers whose opinions are recorded in the files of the Douglas commission, 21 were in favor; only 3 did not see how they could assist.

The sentiment of the manufacturers has not changed to-day. Ten out of 13 large representative factories in Lynn, Brockton, Haverhill, Beverly, Marlborough and other shoe towns favor part-time schools; 2 do not, and 1 is doubtful. The management in one of those not in favor is dissuaded because the factory has no dull season, therefore a part-time school seems impracticable. In another, the management is convinced that the unions would not allow such a scheme to succeed. The firm which expressed itself as doubtful was influenced by the belief that since Brockton manufactures only a high-grade shoe, it

would be impossible to employ unskilled help while they are receiving training in school. Now, the lack of a dull season does not constitute an insurmountable objection, for any scheme of part-time schooling would be even easier of application under conditions which are stable. Also, it can be shown that the unions have no legitimate ground for objection; that no more would be trained in part-time schools than are now allowed by their apprenticeship rules of the union; and that such a school would tend to reduce the possibility for the young worker to specialize on a man's job. Finally, it is certainly possible in a city where a high grade of work is required for the young workers to be on unskilled work in the factory and on skilled in the school. The returns from the manufacturers may therefore be considered as practically unanimous in favor of part-time schools.

The following questionnaire was used in collecting information, and the answers to the questions here given are typical of those received from practically all who made returns:—

#### COMMONWEALTH OF MASSACHUSETTS.

##### PART-TIME SCHOOLING INVESTIGATION, CHAPTER 64, RESOLVES OF 1911.

##### *Shoe Study.*

*Question 1.*—Do you have any system of training for young people in the business, and if so, in what departments?

*Answer.*—“We have no system of training in any department.”

*Question 2.*—What kind of training, if any, is needed for the shoe business?

*Answer.*—“For general work the principal thing is to get an idea of the work going through the factory, and how to assemble various parts used in making shoes.”

*Question 2a.*—Is there a scarcity of skilled operatives of any kind?

*Answer.*—“Governed somewhat by general business.”

*Question 2b.*—Is there a need of foremen or superintendents having a knowledge of all the processes of the factory?

*Answer.*—“Yes.”

*Question 3.*—Would it be of advantage to the workers to have a knowledge of all the different operations in the making of a shoe?

*Answer.*—“Yes, for promotion.”

*Question 3a.*—Would this be an advantage to the business?

*Answer.*—“From a broad point of view it would be an advantage.”

*Question 4.*—Is there a dull season in your factory when training might be given?

*Answer.*—“No.”

*Question 5.*—Would you approve of a school so organized that young people could get a general training in the principal processes of the different departments? (This school to be so organized that two workers could be employed on each job, alternating every other week, that is, one week in the school and one week in the shop; if necessary, both to be employed in the shop all the time during rush season and both to attend school all the time during the dull season.)

*Answer.* — “Yes, if the work could be carried on independent of the regular factory work, or, in other words, if the school could be run on work designed for that purpose and not interfere with the regular system.”

*Question 6.* — Would such a system of training make for promotion to the commercial or jobbing side of the business?

*Answer.* — “Yes.”

*Question 7.* — Would general knowledge of the manufacture of shoes be of advantage to the salesman?

*Answer.* — “Most decidedly, yes.”

An expression of opinion of this kind is not surprising, for it is certainly true that it would be much cheaper for the manufacturer to have his workers trained in school than be obliged to train them in the factory, and far better than to leave the training to inefficient private schools, or to allow them to pick up or “steal the trade.”

There are some factories in isolated districts in which an effort is made to teach the employees in more or less systematic fashion. They pay more than the learners really earn, because if they do not the young workers will get discouraged and leave, and because it is necessary, for sake of the good name of a firm, to pay something approaching a living wage to every employee. Where a school provides the training, it would be possible for the worker to be employed on unskilled work in the factory, on which he could really earn a decent wage, until he has acquired sufficient knowledge in the school to enable him to earn a fair wage on a better job. Even with training of the most general character provided in school, the time necessary to learn in the factory would be greatly reduced. There is a direct loss, at present, to the industry in the bonus paid to the unskilled worker. Beside that, there is the loss due to spoiled work, unnecessary machine space and the overhead cost of the instruction. With a careful instructor the item of spoiled work is reduced to a minimum, but the other two items it is impossible to reduce. The manufacturer who teaches his own help bears a large financial burden, and it is not astonishing that he should welcome the assistance of a school.

There are other factories, in fact whole centers, in which apparently nothing is done toward teaching help. In these centers those who have facility for picking up or “stealing their trade” flourish, but this is an expensive process for the manufacturer. A worker picks up a trade by watching an operative until he gets a chance to try the work himself; then by working during odd minutes when the machine is idle he acquires enough knowledge to “bluff the job.” A person who is trying to pick up a job is not doing his own work very carefully, and a person who is “bluffing a job” will spoil more work in a day than a green hand under a skilled instructor would spoil in a month. Of course with these, as with all learners, the machine is not yielding its full return. “Stealing” and “bluffing” are similar, except that in “stealing” the worker picks up his trade without the knowledge of

the head of the room and is therefore likely to do more damage. The practice survives, because the manufacturers hope to draw all their skilled help either from other towns or from other shops. A large portion of the skilled help does come from outside, but there are still many of the young people of the shoe cities who wish to enter the trade. To them the gates are closed, and they must scale them to the detriment of all concerned in some such fashion as has been described.

It is in these same centers that the private shoe school flourishes. These schools charge from \$5 to \$75 to teach a job, depending on the kind. If they really did efficient work there would be no objection to them, except the expense to the pupils, who are largely foreigners, — the illiterate, poverty-oppressed, unintelligent newcomers, the group least able to afford the training. But the schools do not do efficient work. In spite of the high cost of tuition, their pupils are less desired by the manufacturers than green hands. The school simply gives them what the first stage of the "picking-up process" does, a basis for a "bluff." When they leave the school they soon find that their training is no recommendation, so they pose as skilled hands, and enter on their career of spoiling work and getting "fired," until experience at last makes them really skilled. It is evident that this method of learning is a costly one for the manufacturer. Undoubtedly it would be cheaper for all concerned, except perhaps the few small shops which do custom work and employ only the highest priced workers, to support the State in an effort to establish part-time schools.

*Replacing Pupils.* — No manufacturer objected to the plan on the score that there is a shortage of help among the fourteen to seventeen year old workers. The number of children employed in this and in the other skilled and semiskilled industries is a very small proportion of the total number. There is a very large supply of unskilled help, just as there is a very limited supply of skilled help.<sup>1</sup> It would therefore be perfectly possible to get the extra force required to conduct a scheme of part-time schooling.

*Unions.* — The manufacturers look for objections to such a plan on the part of the labor unions. The unions might very properly object if the purpose of this training were to produce none but specialized workmen on the big-priced jobs, or if such a result were to be inevitable. Of course that is not what the school aims to do; it aims to give such a general knowledge of the trade as to open the way to future advancement in the trade along the usual channels, guarded in whatever way the unions may see fit to guard them. The purpose is to prepare young people to work towards the top, but it could not give them training which would enable them to begin to work immediately on any highly skilled work. As a matter of fact, the schools will tend

<sup>1</sup> Opinions differ here. The unions report that there are always skilled men who are unemployed, and the manufacturers report that they cannot get enough skilled help or foremen.

to keep those few young workers who could succeed in overstepping the barriers set up by the union from specializing early. They could do exactly what the unions aim to do,—serve to keep the men's jobs for men. The unions do not object to schools whose purpose is general training, and it is probable that a complete understanding of the situation will remove all objections.

The local unions, including cutters, treers, heelers, sole fasteners, rough rounders, stockfitters and Goodyear operators, which have more or less uniform rules as to the number of new people to be admitted to the separate trades, teach or allow to be taught annually an average of 4.9 per cent. of the total membership of the union. Now there are only 3 per cent. of the total number employed in shoes between fourteen and seventeen, and only one third of the number, or 1 per cent., would finish the school training each year. There are, it is true, some unions which do not allow any one to learn the trade practiced by its members, but there are others which place no restriction of this sort, and the latter are larger in number though not so powerful as the others.

There is very little help to be gained from previous experiments abroad. There are continuation schools for shoemakers' apprentices in Vermelskirchen, Breslau, Munich, Erfurt and Hanover, but only in Vermelskirchen is there any system of training for the factory worker. The American consul at Breslau says that "176 shoemakers' apprentices are instructed in special classes, attention being paid to the material with which they work and the problems connected with their profession, whereas the ordinary shoe-factory employees are classed with delivery boys and other unskilled workers, and given only a very general instruction."

At Erfurt the situation is similar. "The shoemaker class of the above school [evening trade school] is organized chiefly for the benefit of the journeymen in the workshops, and not for the workers in shoe factories. As the latter are either mere operatives or masters of but one branch of the shoemaking industry, they could put to little or no practical use most of the many-sided instructions given in a trade school intended primarily for the shoemakers who make shoes to measure." That is, it is apparent that in Germany the hand workmen and the small shop are still the largest and most honored part of the shoemaking industry; that the apprenticeship system still persists for these hand workers, and is further supplemented by school instruction; and that no plans have been made for the training of the factory worker. It is an entirely different problem here, where the hand workmen are an exceedingly small proportion of the total number employed, and are growing less each year.

In Vermelskirchen there has been for some time a shoe school in which all the machine operations of the factory have been successfully

taught. It has also taught new systems and ideas in factory management, but has not presented that wider aspect of civic and industrial life which should be presented to the young working citizen. The school at Vermelskirchen is a full-time day school, running forty-four hours a week, with thirty-four hours of practical work and ten hours of theoretical.

The German schools have many suggestions for the trade training of our young workers, but their programs would need supplementing on the liberal side.

In Great Britain there are nine school centers for factory workers, London, Bristol, Northampton, Leicester, Stafford, Leeds, Glasgow, Cork and Dublin. Some have both day and night courses, and some, such as the Northampton schools, are merely night schools, but there are no part-time schools. The students in the day schools are usually the sons of owners or superintendents, while the students in evening schools are factory or shop workers of three or more years' experience. The instruction covers all the operations, as well as the study of different kinds of material, shop management, etc. This instruction, as well as that in the German schools, can furnish much helpful information on the technical side, but it has nothing to suggest for the relating of other training to the work. In this larger aspect the schools of Massachusetts will be the first of their kind.

### *Textile Industry.*

The owners and superintendents of textile mills appear to be less cordial to the idea of part-time schooling than are shoe manufacturers, but from the records of the industrial commission it appears that many of the textile manufacturers would be willing to co-operate in a plan of part-time schooling. When these same manufacturers were approached during this investigation, however, it was found that they were willing to consider such a plan for selected groups or a comparatively small number, but were not willing to consider it for the whole group between fourteen and seventeen years of age. Of the 14 manufacturers outside of Lawrence who expressed themselves on this question, only 3 were in favor of a plan which would affect the whole group. One of these is actually co-operating on a small scale with the part-time school in Fitchburg. The 14 whose opinions are on record are all responsible people, mill agents or treasurers, the men who in the final resort would settle the question for their mills; yet the 50 or so overseers and superintendents interviewed said that there was nothing in the organization of the work that would prevent such a plan from being carried out. Many had seen the plan worked out under similar conditions in England and were convinced of its practicability. The difficulty which they could foresee would be the scarcity of help of this age. They said that it would probably be impossible to work it

out, since already it is difficult to secure enough young help, and a half-time plan would double the demand.

At a meeting of the 6 textile manufacturers in Lawrence there was unanimous indorsement of the part-time plan for selected groups. They all felt the need of further education for all their employees, and were willing to co-operate in any way possible in a project for furnishing it to them. They signified their readiness to take as many pairs of boys and girls as the school could furnish on a half-time basis. But here, too, the manufacturers foresee great difficulty in securing sufficient help to enable them to extend the plan to include all of their workers. The manufacturers of Fall River, New Bedford and Lowell feel that there is already sufficient opportunity for ambitious young people to get training in the evening schools. It is the isolated centers which feel most keenly the need for the training.

It is the difficulty of securing enough young workers that needs most to be considered, for it is certainly true that there is already an insufficient supply of young unskilled help, and any plan for part-time schooling would increase the demand. Eighty per cent. of the age and schooling certificates granted in Fall River were granted to children to enter the cotton mills. That is, four fifths of all the children in Fall River who for one reason or another go to work enter the cotton industry. It would, then, apparently be impossible to secure an extra force, equal to the original, for a half-time plan.

A more hopeful aspect of this case is presented by a situation which is in itself exceedingly grave in this whole problem of the young worker. It was found, by a comparison of the number of age and schooling certificates granted to fourteen-year-old workers with the number of children found by the truant officers in the mills, that apparently many enter the industry, stay in it but a very short time, and soon join the idlers on the streets. It is from this floating group that the part-time school must hope to draw.

A comparison of the figures in column 1 with those in columns 2 and 3 in Table II., page 103, shows that about twice as many secure age and schooling certificates as are found at work in the mill. This cannot be due to the taking of certificates for summer employment as it was found that very few, if any, do this. Once they leave school they rarely return, and they apparently do not remain at work.

It is impossible to predict just what the cotton manufacturers would do if part-time schooling were to be made compulsory. Many stated that they would not employ these young workers unless they could do so for full time; others were doubtful, and wished to see what their neighbors would do. In all probability, many manufacturers would cease to employ boys and girls, but others would hire those discharged.

It is difficult to determine just what obstacles will be met in attempting to organize the work of different departments in the mill so that

an extra force can be employed to do the same work, and thus avoid stopping the machines, while these young workers are attending school. Many employers stated emphatically that it would be impossible to secure a force of one sixth more young workers, so that those now employed could attend school one day per week, approximately one sixth of their working time. It was found, however, that in some mills just this thing is being done on a small scale, to fill the places of those who are out sick. In some cases extra workers, "spare hands," are employed regularly; in other cases these extra helpers are hired from day to day.

The problem admits of another solution. Some portion of the younger help could be replaced by older help at a higher wage. This has been done in some mills, and it has been found that the increased wage is more than justified by the greater efficiency of the worker. That is, the actual labor cost is lower. Even supposing an actual present increase in labor cost through the employment of such older help, the far-sighted manufacturer would agree to the proposition since it would be the condition for a future reduction in his labor cost.

It has been stated that older help cannot, for physical reasons, do the work which is done by boys and girls, especially in the spinning rooms. Two reasons given are that the spinning frames are too low for older workers, — a condition which could be met by building them higher or blocking them up, — and that the spinners, especially those on the finer counts, must begin at twelve or fourteen years of age for their fingers to acquire the ability to do the "piecing up."

No unanimity of opinion was found among the overseers of spinning rooms who were interviewed. Some claimed that any one could learn to do spinning in a few minutes, and some claimed the opposite. The obvious answer seems to be that older people are now being taught, and the chief investigator learned how to do "piecing up" in a few minutes. The finest spinning in the mill is done on the mule, and men sixty and seventy years old were found doing this work. The mule spinner begins to learn his trade at about eighteen years of age.

From the point of view of the worker the practicability of a part-time plan cannot be seriously questioned. It is true, there is no possibility at present of inducing the manufacturers to allow their young help to go to school without making a reduction in pay proportionate to the amount of time allowed, but the children of the textile industry have a higher proportionate wage and a lower standard of living than those in an unskilled industry. It is always true that the wages of the children in an unskilled industry approach more nearly those of adult help than they do in a semiskilled industry, such as shoe manufacturing, or in a skilled industry, such as the machine trade. It is the opinion of the investigators, who visited over 300 of the young textile workers, that they could, in most cases, afford the reduction.



A great deal has been said about the half-time system in force in the cotton centers in England. It is entirely different from anything proposed in this State, being really nothing but a compromise made with employers of very young help when the school age was raised to fourteen years. It permits children from twelve to fourteen years of age to be employed half-time in the mills. There is no attempt at all to relate the training in the school to the work in the factory; it is merely the usual grammar school course taken in alternate half-days with the usual full-time students. It surely must mean either a retardation of the full-time group or an uncomfortably stiff pace for the half-time group; at all events, the system is fast dying a natural death. Manchester, the great cotton center, has practically no half-timers; Bolton, Bradford and Oldham still have some, but the number is decreasing each year. It is not the manufacturers who have prevented the enactment of a law forbidding the employment of children under fourteen, thus providing full-time school training up to that age; it is the working people themselves who do not wish it. They cannot bear, or feel that they cannot afford, to forego the slight income which these half-timers bring in. The part-time schooling system in England, then, has no suggestions to offer to the part-time schools of Massachusetts, except that it proves that two persons can work on the same job and change every half day.

In Leicester there is something more nearly approaching the proposed Massachusetts plan. This school has both day and evening courses for the knitting industry. The day school gives a special course in knitting on Mondays and Thursdays from 2 to 5 o'clock, which is attended by apprentices from the factories and by students in other departments of the school who want to get a general knowledge of conditions in all trades of the vicinity. This school is very successful, and is highly regarded by both manufacturers and workers.

In the German Empire there are many continuation schools for the fourteen to seventeen year old group of workers. In some of the States attendance is compulsory; in some not, but the tendency is decidedly toward compulsory attendance. We know very little about the textile instruction there, but if shoe-factory employees are classed with errand boys and other unskilled help, and given only the general instruction provided for that group, it is hardly to be expected that more special instruction would be provided for textile workers.

#### *Department Stores.*

That a plan of part-time schooling for department stores is practical has been proved by the success of the school for salesmanship started six years ago by the Women's Educational and Industrial Union. There are no material difficulties in the way; the school requires little or no equipment beyond blackboards and chairs, and the

stores are favorably inclined to the plan and are willing to send more children than the school can accommodate. The difficulty lies in getting efficient teachers. The demand for them from the stores has been so great that they have been "spoken for" before they have completed their training at the Women's Educational and Industrial Union School. Good teachers will be expensive, but this difficulty can be properly met in time, and with a proper expenditure of money nothing remains to make the plan anything but eminently practicable.<sup>1</sup>

### *Confectionery Industry.*

In several of the large candy factories some of the employees have been sent to continuation schools during working hours as a matter of philanthropy. These are usually girls who are about to be married, and they take their time at the school at the expense of the manufacturers. A more general plan of part-time schooling would be quite different from this, however. Twenty-six and five tenths per cent. of all the women workers in candy factories are seventeen years of age or under.

The difficulty comes rather from the point of view of the worker, whose wages are extremely low. If they were to be "docked" for the time spent at the school, it would be a severe hardship.

*Cumulative number and percentage of women wage earners investigated in candy factories under eighteen years of age, classified by earnings.<sup>2</sup>*

	Number.	Per cent.
Under \$4, . . . . .	110	36.6
Under \$5, . . . . .	240	79.8
Under \$6, . . . . .	280	93.0
Under \$7, . . . . .	298	99.0
Under \$8, . . . . .	300	99.7
\$8 and over, . . . . .	1	.3
Total, . . . . .	301	100.0

Seventy-nine per cent. of those under eighteen get less than \$5, 93 per cent. get less than \$6. This does not leave a large margin for part-time schooling. The statement is made in the report<sup>3</sup> that "no one at all conversant with the facts believes that any proportion of the women workers do not need every cent they earn." Only "1.2 per cent. of the candy workers gave none of their wages to the home"<sup>4</sup> (97.3 per cent. live at home<sup>5</sup>), "78.5 per cent. gave all they earned;"

<sup>1</sup> For a further discussion of need and practicability of training for this group see Appendix G.

<sup>2</sup> Minimum Wage Report, p. 51.

<sup>3</sup> *Ibid.*, p. 80.

<sup>4</sup> *Ibid.*, p. 79.

<sup>5</sup> *Ibid.*, p. 78.

22.1 per cent. had received charitable assistance, as compared to 12.7 per cent. in department stores. It seems, therefore, almost impossible to expect these girls to give up any portion of their wages for part-time schooling.

The following table seems to show that the more prosperous and older workers would not afford a wage reduction, whereas more than half of the minors would do so. This may be taken as an indication of the proportion finally able to afford some reduction, for nearly all the workers interviewed were interested in one form or another for further training. The proposition to give some Saturday afternoon classes was met with almost universal favor.

*Attitude toward wage reduction.*

	GROUP AT WORK ONE YEAR.		GROUP AT WORK SIX YEARS.	
	Yes.	No.	Yes.	No.
Number of young workers, . . . . .	12	10	8	28
Number of parents of workers, . . . . .	13	9	7 <sup>1</sup>	10 <sup>1</sup>

*Attitude toward Saturday afternoon classes.*

	Favoring.	Opposed.
One-year group, . . . . .	13	4
Six-year group, . . . . .	35	11

Part-time schooling for candy workers would be a very much needed help. As a group they are inefficient, and need some outside stimulus and training to pull them above the line at which they earn a bare existence. They cannot, however, as a group, afford any considerable reduction in wage, and would much prefer to give up their free Saturday afternoons.

*Machine Industry.*

Because of the high degree of skill required, together with the ability to do independent thinking, employers of machine shop help are more decidedly in favor of part-time schooling than any other group. Sixteen will co-operate with any form of part-time school, while two definitely refuse to do so and three are doubtful. Practical work in the industry has shown that manufacturers who were opposed to the plan a few years ago are now its most enthusiastic advocates.<sup>2</sup>

<sup>1</sup> No information for 19 cases.

<sup>2</sup> See pp. 119-123, letters from manufacturers.

The first part-time schools in the United States were developed in connection with this industry. Wherever they have been established through the co-operation of a few manufacturers, they have gradually grown to include most of the important manufacturers and many of the small ones. In Fitchburg and Cincinnati the plan is a proved success for the machine shops. Furthermore, manufacturers in other communities, realizing the value of the training, are joining in the movement. Quincy and Beverly have had schools for some time; Fall River and Newton have started schools, and other cities outside of the State propose to do so.

The mechanical difficulty of arranging the shifts or workers is greater in this trade than in any other studied, but since it has been done in Fitchburg, Cincinnati, Beverly, Quincy, Worcester and Newton, it can be done in other places, and the resulting increase in intelligence and efficiency will more than compensate for the trouble.

No difficulty need be anticipated from the young workers themselves. The higher the type of industry the more prosperous the family from which the young worker comes, and if a reduction in wage proportionate to the amount of time taken for training should be necessary, the group would probably be able to afford it; but it is probable that it will not be necessary. Only one of the sixteen manufacturers who are willing to co-operate mentioned a reduction as a condition necessary for the co-operation.

From the point of view of expense to the State there is nothing alarming. Very little equipment is necessary for teaching related mechanics, mathematics and mechanical drawing. A few of the fundamental machines for demonstration and illustration are, of course, necessary, but anything beyond that can come only as means permit. It is desirable, but not absolutely necessary, that there should be enough to go far towards teaching the trade, but the absolutely necessary equipment would involve a prohibitory expense.

Considering that manufacturers so generally favor the school, that young people are so much in need of training and are so well able to afford it, and that the necessary equipment is of moderate cost, part-time schooling for machine shops is certainly practicable.<sup>1</sup> The fact that so much has been done already along this line, and that the work is developing rapidly, is the best answer to any question which may be raised regarding practicability for the machine industry.

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<sup>1</sup> See pp. 65 and 117.

# VIII. OPINIONS OF EMPLOYERS AS TO THE NEED AND PRACTICABILITY OF PART-TIME SCHOOLING, VOCATIONAL OR OTHERWISE.

The following are some of the replies received from employers who were asked to express an opinion as to the practicability of part-time schooling, and whether or not they would be willing to co-operate in the establishment of some scheme.

Regarding the machine business, one manufacturer writes:—

From our point of view, so far as our business is concerned we do not believe in the half-time schooling, vocational or otherwise. We believe that a boy or girl should be compelled to attend school, wherever possible, until at least a common school education has been obtained, and then such boy or girl should acquire some trade or profession, serving an apprenticeship of the time necessary to acquire such a trade.

It is extremely difficult to obtain the proper kind of labor to-day in this section. We are able to obtain plenty of unskilled labor, which is usually uneducated, and in most cases unfamiliar with the English language. The kind of labor we are looking for is intelligent, high-grade, first-class labor, and it is difficult to procure. If we employ help under seventeen, we would not be disposed to break up their working time by sending them to school one day a week. This interferes with business, and we believe the best thing to do is to give a boy and a girl a common school education and then have them serve an apprenticeship, or go into shop work, where good wages may be obtained.

We have a great many employees here earning from \$18 to \$25 a week who never served an apprenticeship and never saw a machine shop until they came into our own.

This firm employs none under seventeen years of age.

One large employer of labor, whose plant is operated upon a system which has cost thousands of dollars to perfect, the operations of which are based on a fixed payment for a unit of separate operations, either one hundred or one thousand, regardless of the machine used, writes as follows (this employer has not any regular system of apprentices): "It would interfere materially with us if we were to give employees under seventeen years of age any time off for part-time school, that is to say, so far as we employ such employees." (Out of 2,400 men only about 25 or 30 boys are under seventeen.) "The trouble would be that we should lose the product of so much of our plant as their employment would represent." This employer suggests that the boys spend Saturday afternoons in the furtherance of their education, as formerly the boys were obliged to work on Saturday afternoon.

Another employer is quite enthusiastic. He says:—

There certainly is a great need for vocational education here in New England. Beginning with the automobile boom the east has been drawn on constantly for our best men, and we are doing practically nothing to replace them. Besides this, the middle west has made great strides in this

line of education, and will in a very few years have the best-trained men in the country in their shops. New England cannot afford to stand still. It has been our boast, and one founded on facts, that our products were superior, because of our skilled workmen. We are therefore not only in danger of a scarcity of skilled mechanics, but of losing our hard-earned reputation, as we will if we fail to produce high-grade machinery through inefficient workmen. A few schools in the east have adopted this plan with success, notable at Fitchburg, but when we see the strides Cincinnati alone is making in this direction it makes us feel like crying a warning to our educators and legislators that there is a great need for activity in this direction here in Massachusetts. There is also a great need for a good apprenticeship system, but unfortunately it is growing very difficult to get good boys to go into it. The part-time system is intensely practicable for many reasons. It is attractive, first, because it allows the boy to go on with his mates in the school life; and second, because it gives him enough money to pay his board during the time he is not only getting an education but also learning a trade. The chief success of this plan, it seems to me, is that it attracts a class of boys to a trade that has in the past two decades been losing attractiveness to this class.

Another employer says:—

We believe there is need for part-time schooling for working children in this industry. In our city, so far as we know, there are no means to furnish vocation training between the ages of fourteen and seventeen except where the party works continuously in shops, and may, if he chooses, attend evening school. We believe there is need for an apprenticeship system, and in this line of business should consider that a limited number of apprentices could be served in a way that would be practicable and advantageous to employer and employee. If the public schools or independent school could furnish the part-time schooling we believe vocational and industrial work could be carried on jointly between the school and factory. Any method which would tend to guide the undeveloped talent of children between fourteen and seventeen years of age into a vocation that would be desirable is to be heartily recommended, and we believe that the boys and girls of that age are looking for just such opportunities; and, again, it would tend to make good citizens of them, because their lives will be more useful, and by having the proper training they will be happy in a congenial work. We heartily endorse the movement.

Still another says:—

In answer to the question whether we would be willing to give our employees under seventeen years of age one day a week to attend a part-time school, would say that in general we would answer this question in the affirmative, provided the conditions under which they would be instructed are satisfactory. We believe that to make a part-time school effective there should be a special supervisor of the boys in a part-time school whose duty it should be to confer with the employers, and keep the boys up to their engagements with their employers and with the school authorities.

An employer in a city where a part-time system is already established wrote the following letter in answer to an inquiry outside the State, and sent a copy to take the place of a direct answer:—

We have 18 of these boys in our employ. Have graduated 6,—2 in 1911 and 4 this year. We have them in our machine room, learning the sawsmith trade, in our drafting room, and 2 of them in the office. All of them are doing nicely. It is a great pleasure for us to say a word for the best plan of education that has ever come to our notice for a boy of limited means, whose main object is to fit himself to earn a living at the *earliest possible date*. They are learning a trade and getting an education at the same time. Judging from their efficiency in the trade we feel they have learned as much of the trade by alternating in the shop and the school as the old plan of apprenticeship did by being all of the time in the shop.

It seems to be the impression in the high school that on the subject they have studied they will have obtained greater proficiency than the boy who goes to school all of his time. To the casual observer this would seem impossible, but educators complain that the average scholar going to school all the time does not seem to take more interest in his studies than will simply allow him to pass his examination. They frequently hear, "What is the use of this study, and what's the use of that?" Therein lies the secret. The boy who is going to school studying mechanics has to go to the shop and apply this knowledge in the actual work, and readily sees what the study is for. He also finds that unless he has actually mastered the subject he cannot use it in his work. The result is he is interested in a greater degree than it is possible for him to be by going to school all the time, and not knowing the practical application of the subject he is studying.

We find, also, that the average apprentice who is all of the time in the shop feels if he stays in the shop three years without any particular effort on his part he will be a machinist. The boy going to school seems to realize it is up to him whether he is a good mechanic or simply has served his time. . . .

In this way (part-time) you will see they are studying school in the shop, and shop in the school, and there is no break in their education at either point. The more a man knows of the *why* he does a thing the more interested he becomes, and also the more efficient.

Some of the educators with whom we have talked have brought up the proposition that there are a good many industries for which there is no text-book. That is, what they are studying in school does not fit with the degree of exactness. That is the case with machine trade. This is quite true in some instances. This would, however, seem to be an opportunity for the educators, or those who have this matter in charge, to study the subject, and supply education matter for the public schools that *will* fit each case.

This course will fit agriculture, and there is no reason why it will not fit office work. The merchants on the street would have better clerks if they took some of these boys and allowed them to get an education at the time they were learning the business of selling goods. The druggist wants a drug clerk. Seems to me the public at large would be safer in

the hands of a man who had learned the business under the co-operative course than the man who had to dig it out from the entirely practical point of view.

It means a lot of hard work for some one to have the proper studies in school to fit in with the occupation the young man seeks to learn, but it seems to us worthy of the struggle, to the end that the taxpayers of this country and the boys who are going to school shall have something that they can use in their business of making a living, and use it immediately upon leaving school, without the necessity of spending another two or three years to learn the practical side.

The boys whom we have in the shop will have an education at the end of four years, and have a trade, and be earning as much as they would if they had served their three years shop work only. They will have a foundation on which to go farther than it would be possible for the boy who had to start in with common school education and sometimes less.

There are a great many schemes of industrial education; all of them are good; they all help; but as stated earlier in this letter we believe this is the best of them all. The boy gets the benefit of actual contact with the students and faculty of our public school system, which to our mind is a decided advantage over a private tutor. He learns to mingle with his fellows, and sees life as it is in the school, when he goes to work in a commercial establishment where the actual activities of life are being performed in a truly commercial way. The tools must be kept up-to-date. The foreman must give the boy enough individual attention to see that he knows what he is going to build, and to see that he does it in a most efficient manner. It is the same thing with him as any other boy or man that is hired in a commercial establishment. He must earn his way, as it is evident the business could not be founded on philanthropy. He, too, is surrounded by men who are masters of the art, and learns from them by observation and personal contact.

In both instances he is up against the real thing. When he finishes school he knows what he is going to do, and knows what he can do. When the average boy who goes to the high school finishes his course and applies for a position he is asked what he can do, and his reply will probably be, "I don't know;" which you will find a fairly truthful one.

This course gives the manufacturers a thinking mechanic. It gives the laboring men's boys a chance to become a thinking mechanic; gives them a chance with the education they obtain to become manufacturers, if they have the energy and determination to carry them so far. It gives a man the education that allows him to think clearly for himself, and he does not have as many troubles that he cannot overcome without assistance, as if the reverse were the case. Places him in a position to compete with any one.

Manufacturers will tell you that they are constantly looking for men who are capable of taking thinking parts in the overseeing and management of their business, without always finding what they are looking for. A system of education such as this cannot help but relieve this situation.

In conversation with men who have been to an institute of technology, they have said, "Wish I had had this course, and I would have gotten more out of my Tech."



We feel very certain that the very great majority of taxpayers will get more for their money in this way than has been the case under the purely academic condition that has prevailed.

In conversation with our superintendent of schools he tells us that while he does not know positively, he feels very certain that 100 of the 800 odd pupils which will start in our high school next year never would have gone farther than the ninth grade, or first year in high school, had it not been for this course.

The fact that the boy is able to earn a certain amount of money, which helps his parents (and very often they need this help as soon as he has an earning capacity), makes it possible for them to allow him to spend the extra three or four years necessary to graduate, having in mind when he graduates that he will be as well equipped for life as if he had stopped going to school and spent his whole time learning the trade.

The thing necessary to our mind to successfully start a course in connection with the public schools is to get the school board and faculty working with you. Assure yourself of the hearty co-operation of the manufacturers. Have them understand that they cannot exploit the boy; they must agree to teach him a definite something, and then push him forward as rapidly as his capacity for the work will admit.

Last, and of just as much importance, it is necessary to get a practical man as instructor of the course. Mr. Hunter, whom we have here, learned the machinist trade, graduated from school of technology, worked in drafting room for three or four years, and keeps in touch with all new ideas in the mechanical world, visits the shops and keeps himself right up to the minute. This enables him to answer any questions the boys ask him about their work or their studies as readily, and with as much intelligence, as would a proficient Latin teacher with question asked about that subject.

Finally we think it the best thing that ever happened.

## APPENDIX F.

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### SUGGESTED PROGRAMS FOR PART-TIME EDUCATION.

In making recommendations for programs of vocational training towards different industries, the present industrial situation as regards specialization of labor is accepted as one which is inevitable, and as making for the greatest good to the greatest number. The possibility of offering training in schools so extended as to make it possible for one worker to learn all the operations of an industry has not been considered practicable nor desirable. The programs offered aim to establish a substitute for the old apprenticeship system in the form of a training which will enable the worker not only to learn the work so that he may earn a living, but also to make him a more intelligent worker because of his knowledge of the industry as a whole. These programs, therefore, do not presuppose changes in the prevailing system of manufacturing, but aim to introduce a plan of co-operation between shop and school which will result in an adequate system of training for young workers. Such a plan should insure to the human element in manufacturing as much consideration and thought as are devoted to methods of producing goods in the best factories and shops.<sup>1</sup>

Part-time courses should provide employed young people between fourteen and seventeen years of age with a training which is twofold in its purpose:—

(a) It should increase their general intelligence and lead them to understand better their social and civic duties. This is here designated as training for citizenship, or liberal education.

(b) It should increase their industrial intelligence<sup>2</sup> and skill so that they will be able to do their work more intelligently and skillfully, understand its relation to that of other tasks and to the business as a whole, and acquire such an understanding of the organization of industry and such an adaptability in the industry that promotion to the best positions which they are capable of filling will be possible. Such training is called here industrial or vocational education.

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<sup>1</sup> For a discussion of the practicability of these programs, see Appendix E, pp. 99-123.

<sup>2</sup> Report of the Commission on Industrial and Technical Education, 1906: "This lack is not chiefly a want of manual dexterity, though such a want is common, but a want of what may be called *industrial intelligence*. By this is meant mental power to see beyond the task which occupies the hands for the moment to the operations which have preceded and to those which will follow it,—power to take in the whole process, knowledge of materials, ideas of cost, ideas of organization, business sense, and a conscience which recognizes obligations."

Such a liberal and vocational education, when measured in terms of power, that is, ability to understand and apply what has been taught, will be for many more than the equivalent of what these young people would receive were they to finish the regular grammar school course.

Programs and courses of study to furnish such an education as this, and to meet the needs of individuals working under different conditions in various occupations, must provide the following:—

(1) Training for a better understanding of specialized machines and for the development of manipulative skill as supplemental to the work of the factory, such training to furnish a basis for the beginning of a broader training on other machines and the development of a wider industrial experience and intelligence.

(2) Training in the commercial, office and selling side of the business for those in the manufacturing departments who show ability along such lines.

(3) Training for workers in the so-called unskilled industries, to increase their interest and industrial intelligence, and to develop capacity for advancement where opportunity for promotion exists, and, where it does not, to fit for more skilled and remunerative employment in other industries.

(4) Training for workers in juvenile occupations which will enable them to gain favorable entrance to occupations suitable to adults.

(5) Training for those who are not naturally capable, bright and ambitious, to reduce, so far as possible, the number of unskilled, and to make those who must probably always be specialized operatives the best specialists possible and the best citizens.

(6) Training for both boys and girls who have completed the grammar school, as well as for those who leave the lower grades at fourteen, to give a knowledge of the industry, and to show the application of what they have been taught in the elementary schools.

(7) Training in citizenship for all; and in the household arts for all girls, especially for those who are temporarily employed at a low wage in unskilled occupations.

(8) Instruction of the type offered in the regular academic high school for those who may wish to go to college.

(9) Training which will make the pupil wish to continue in night courses after the age of seventeen, so that the influence of the school may be exerted for a longer period than at present.

(10) Training which will conserve the strength of the young worker and relieve monotonous employment by games, gymnastics, baths, entertainment, recreation and instruction in the proper care of the body.

Schools with courses providing for the above would meet the different existing conditions and needs in all of the industries studied. These industries and occupations are believed to be fairly typical, and, in a broad way, the same principles would probably be found applicable to the other industries not treated in this report. It is apparent

that no one program or course of study will fit all conditions; these must be varied to meet the needs of each community. Even in the same city, young people working in the same trade will get very much broader training and find larger opportunities in some shops than they will in others, and the function of the school must be to equalize, so far as practicable, such opportunities by supplementing the work of the shop.

Except in the largest cities, one institution should be organized in each city or large town and made the center for all the varying requirements which exist in the community. Such an institution should have all-day courses for both boys and girls who wish to continue their education beyond the compulsory school period. These courses should be so organized that at the end of a period of three or four years pupils can enter a trade with advanced standing as apprentices, and at any time during such a period, especially at the end of any one year, the school should be prepared to place them, through co-operation with employers, in the positions which they are best fitted to fill. After they have secured positions, the school should continue its hold upon them through part-time courses until they are at least seventeen years of age, and, from this time on, through evening school instruction. All who cannot attend a full-time day course should receive their school instruction on a part-time basis, pupils attending at such times and in such numbers as will be satisfactory to the school authorities and to the employer. This will mean that the institution must be operated twelve months in the year, six days in the week and eight hours a day, with evening sessions of from two to three hours.

This institution should be organized with all-day, part-time and evening courses in as many different departments as there are distinctly different trades employing enough people to warrant the establishment of such courses. The school should prepare boys and girls in all-day courses for entrance to the skilled occupations; through part-time courses, it should prepare those in the comparatively unskilled industries in which there is little future, and those employed in juvenile occupations, for entrance to a skilled or adult employment.

#### EFFICIENCY OF INSTRUCTION.

Teachers should not be allowed to teach such an amount of time in both day and evening schools as to impair the efficiency of their teaching. While they should be in the service of the school for the full period of twelve months, they should be allowed sufficient time and opportunity to keep in touch with industrial needs and conditions. This should be considered as important a part of the work as the class-room instruction, and no teacher should be employed or continued in employment who does not conform to this requirement. The longer the teacher remains out of industry as a workman, the more necessary will such study become. Teachers of related academic sub-

jects should be required to gain a working knowledge of the trade or trades from which their students come, and to keep abreast of the times, as in the case of shop instructors.<sup>1</sup>

#### CO-OPERATION OF EMPLOYERS.

A part-time vocational school should always have an advisory committee composed of practical men and women, both employers and employees, who will aid by advice as to the kind of instruction needed, and especially in securing the co-operation of the industrial and business portion of the community.

Amount of time given to school attendance should be not less than eight hours per week. Where young people are employed in the most highly skilled industries, at least the equivalent of one working day should be taken for part-time instruction in the related technical and theoretical subjects. Where not more than this amount of time is taken, little besides a general understanding of machines which they are not yet operating in factory or shop can be given, and when it is necessary to give preparation for a new machine in the school, more time will be required. A week or more might then be devoted wholly to the school, to be followed by a similar period later. If half time is devoted to the school, a sufficient amount of practical instruction can be given to make for a thorough understanding of the trade. Where young people are engaged in juvenile employments, and preparation for another occupation is to be given, at least one half of their time could profitably be devoted to school instruction. In this case it might be considered that they are regularly attending school, and working to earn enough money to enable them to do it, with the idea that the dominant interest will be in the school.

#### FLEXIBLE PROGRAMS TO MEET INDIVIDUAL NEEDS.

The program and courses of study in such a school cannot be made and remain fixed indefinitely, as is now the practice in most educational institutions. Only a general plan of what is to be accomplished can be made for the year, and the program must be constantly shifted to meet the varying requirements from week to week, sometimes even from day to day. In other words, the program should be made to fit the needs of the students, instead of the students being made to conform to the program and curriculum. Some one in the school must be responsible for an exact knowledge of the requirements of every student, see that they receive just the instruction which is needed, watch their progress in the industry and see if they are profiting by the training of the school. This will be one of the most important, in fact, an indispensable feature of the school. It will mean a constant "measuring up" of the efficiency of its work.

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<sup>1</sup> For a discussion of teachers, see p. 129.

## CLASSES OF THOSE WITH SIMILAR NEEDS AND EXPERIENCE.

Except in the case of instruction in such general subjects as civics, household arts, hygiene and gymnastics, those who come from different industries cannot be grouped together in the school. It will be necessary to organize a class of those employed in the same industry sufficiently small so that the teaching can be practically individual, using the every-day industrial experience as the basis of instruction. To do this, a class unit of fifteen is recommended, and the number must not exceed twenty. The workers who desire general academic training would make so small a group as to be almost infinitesimal, and it will be quite possible to deal with these exceptional cases in an institution such as is suggested above, or arrangements could be made whereby this work might be done by the regular elementary or high schools.

## EQUIPMENT.

For classes of young people employed in most mechanical industries, considerable machine equipment will be an absolute necessity. In some cases the machines and industrial plant of the factory can be utilized for purposes of instruction during dull seasons, and at other times, by a co-operative arrangement between the factory and the school which will allow the worker to be shifted from one department to another. It will probably be found that few if any classes can be organized without some mechanical equipment in the school to be used for purposes of demonstration. Only in dull seasons will the young people be able to get any very great variety of instruction on machines in manufacturing plants, so that the school must be equipped with the fundamental machines of the different industries. While the school should be equipped with up-to-date machinery, the problem of keeping it up-to-date is not at all analogous to that of keeping up the equipment in a manufacturing plant. The object of the school equipment is instruction, not speed and production, and the machines will not be subjected to the strain and wear of the commercial shop. While many special machines have been developed, the fundamental principles of the most expensive equipments have changed little, if any, in the last thirty years.

## PROBABLE COST.

An institution which would deal effectively with this problem could not be conducted at a per capita cost of less than \$100 to \$150 for students who take the full course every day; for half-time instruction, the per capita cost would be from \$50 to \$75; on the basis of one day per week, the per capita cost would be \$20 to \$30 per year, or, figuring on the latter basis, it would cost the State and the local authorities not less than \$800,000 per year for instruction. If this work should be conducted under chapter 471, Acts of 1911, the State's share

of the expense would be not less than \$400,000 for the education of 40,000 children. To this should be added from \$35,000 to \$50,000 more for supervision, administration, further study and the training of teachers, thus placing upon the State a financial burden of at least \$450,000 per year.

#### TEACHERS.

The most difficult, and at the same time the most important, problem that any comprehensive and practical plan of part-time schooling has to solve is that of an adequate supply of competent teachers. Always and everywhere the chief factor in education in this new, uncharted field, the teacher must play a role of quite unusual importance. Indeed, the character and success of the part-time school will depend almost wholly upon the teachers who can be secured to inaugurate it and to carry it on. No one to-day is competent to present even programs of part-time school work that are more than general, suggestive and tentative; to an unusual extent the teacher must be capable of working out his own programs.

The qualifications of teachers competent to undertake this work are as unusual as the work is novel and difficult. In addition to native intelligence, cultivated by a good general academic education, and a strong and pleasing personality,—qualifications demanded of all teachers,—part-time school teachers must be trained and experienced in the arts, the trades and occupations, in which they are to help their pupils to become more efficient. Those who are to give mainly technical instruction, as distinguished from correlative and practical academic instruction, must have a broad knowledge of the art or trade in which they give instruction, must be always familiar with the latest and best processes and practices of that art or trade, and must themselves be skilled workmen; in short, they must be capable of commanding the industrial respect of the best regular workmen, of foremen and superintendents. It is especially important that these teachers command the industrial respect of foremen and superintendents; for the success of the part-time school will depend upon the intelligent and intimate co-operation of instructors and employers. And finally, all instructors in part-time schools must be superior as teachers,—for they have to deal largely with boys and girls whom their regular teachers,—even the best of them,—have failed fully to reach. A change from the academic matter and method of the regular school to a more concrete and practical matter and method, better adapted to the type of pupil in question, will help the part-time school teacher; but his complete success will depend upon teaching skill and insight of a high order.

Where and how can an adequate supply of competent teachers be secured? Few can be found at the present time,—all too few to meet the demand; and to meet the enormously increased demand that any

general plan of part-time schooling would create there is at present no source of adequate supply. But the outlook is by no means hopeless; the State must undertake the training of such teachers just as the State has for years trained teachers for the regular schools. If the State is to require part-time schools, the State must make it possible for the community to meet that requirement; if the State is merely to encourage the establishment of such schools, the State can do this in no way more effectively than through a supply of well-trained teachers who can demonstrate the practicability and efficiency of part-time schooling.

How and where shall teachers for part-time schools be trained? Where shall candidates for training be found who possess the necessary preliminary qualifications? To secure and train teachers competent to handle the practical academic work of part-time schools need not be a difficult matter. Teachers of successful experience, either in grammar or high schools, who have the right point of view, who are adaptable, who can appreciate and meet conditions as they are, need only to acquire sufficient insight into the processes, the purposes and the point of view of trade and industry to enable them to make their instruction in academic subjects practical and effective. Such insight they might get through brief periods of service in the trades and industries,—summer vacations spent in this way would suffice,—and through constant association and exchange of ideas with their colleagues, the teachers of technical subjects. Work together in the school shops would be of mutual advantage to the academic and the technical teachers.

The problem of securing suitable candidates and training them successfully to be teachers of technical subjects is a much more difficult one. The indispensable qualification that these teachers be workmen of such general intelligence and skill that they will command the respect of foremen and superintendents in the industries, at once limits the list of possible eligibles to workmen of several years' experience,—not less than five, probably eight or ten as a rule,—who are commanding good wages, \$1,000 or more per year. In most cases such workmen will have family obligations which will make it quite impossible, were they so disposed, to sacrifice their present earnings for a single year even, with the hope of fitting themselves for somewhat better paid service thereafter.

The problem of training such candidates in the art of teaching when they are secured is a new and obviously not an easy one. The character of the candidates themselves, the character of the type of pupils whom they are to learn to instruct, the subject-matter, the materials and processes which must be used in part-time technical instruction, and the whole purpose and methods of this instruction are so radically different from those that obtain in the normal schools, in which the State prepares teachers for the regular schools, that it is at once



apparent that here is a problem quite outside the field of any existent normal school. A special normal school might be established for this purpose, but its immediate feasibility is open to question. In the first place, not enough is known at the present time about the details of training that will prove most efficient to enable any one wisely to design a normal school plant of this type; hence, experimentation would undoubtedly prove very expensive. Moreover, whatever plant might be found eventually adequate, it is reasonably sure that both the first cost of such a plant and the expense of operating it would be very large, much larger in proportion to the number of teachers trained than that of any of the existent normal schools. Finally, it is extremely doubtful whether the type of training probably necessary can be effectively given in any institution that would resemble a normal school.

A quite different plan of training teachers of technical subjects commends itself in many ways. It is this. Let the State enter into arrangements with selected existing vocational schools, — full-time day schools, — and with others that may be established, to take in training suitable candidates for technical teachers. The number that any one school could take would necessarily be quite limited; each selected school should specialize in the training of teachers for certain types of work, as printing, pattern making, electrical work, machine-tool work, — those types in which the particular school, through its instructors and equipment, was best qualified to give instruction to would-be teachers. The entire arrangement, all the essential conditions of training, must, of course, be subject to the control and supervision of the State through the executive officers of the State Board of Education. As compensation for the service rendered, the State should pay to the school training these teachers a fixed amount for every unit of service, that is, for every prospective teacher in training for one year.

One of the important conditions of the training proposed should be that the school carrying on this training pay its apprentice teachers for their service as assistants while in training a salary approximately equal to the amount received from the State. This the school can well afford to do, provided, of course, that its work be properly organized. The prospective teachers of technical work must have, as an indispensable part of any course of training that is to prove effective, a large amount of practice teaching under the intimate guidance and supervision of skilled teachers. With a suitable organization, the service that a very limited number of practice teachers could render — and no school should undertake to train more than two or three in any one department — would be sufficient to enable the school to dispense with assistants that it would otherwise be compelled to employ. The saving effected in this way should be applied to the salaries of head teachers to enable the school to secure and to retain the services of the very best, — those competent not only to teach but to train

others to teach. Thus, while this plan would hold out to the school selected for training teachers little or no hope of a net reduction in operating expense, it would promise for the school superior teachers and a fully adequate number of assistants at least as competent as such schools are now able to obtain. The resultant improvement in the service that the school could render its pupils would undoubtedly be inducement sufficient to enable the State to make the arrangements proposed with any schools that might be selected to render this service.

In addition to furnishing the best training that can at present be devised, this plan will go far to make it possible to secure for training the type of experienced workmen required. The pay that is proposed for teachers in training and rendering the service of assistants, together with some additional compensation that such training teachers might well earn for service in evening vocational schools, would approximately make good the sacrifice of wages.

By this plan the best candidates should be trained in one year to begin service as teachers; less promising candidates might require as much as two years of training. It would not be desirable and probably not necessary to undertake the training of candidates who could not become fairly competent teachers within two years.

Finally, a very important advantage of the plan proposed — which, as every plan must be, is confessedly experimental — is its inexpensiveness and its susceptibility to adaptation to the growing and fluctuating demand for teachers of the type under discussion. The State is called upon to make no initial investment in plant or organization; so there can be absolutely no financial loss should the plan for any reason be abandoned. At all times the State would pay only for service rendered, and that at a much lower rate than such service could be secured — were this plan feasible — in an independent institution that the State might establish for this purpose.

#### TRAINING AWAY FROM ONE OCCUPATION INTO ANOTHER.

Schools must face the fact that young people, because they can be hired at low wages, will be employed in large numbers to do what is termed boys' and girls' work. After the period of this juvenile employment has passed, they reach the age of seventeen or eighteen and find that they are not able to earn much, if any, more than when they started their industrial career. Most of them have made little or no progress in fitting themselves for an adult's work. Where this juvenile employment is in a city of varied industrial opportunities the problem is comparatively simple, because the young person, while attending a part-time school, can be fitted to enter an occupation which employs, in the main, adults. Such work should be conducted on a half-time basis, preferably in an alternating weekly plan. In this case the juvenile employment should be made to serve as a means of furnishing the necessary money to allow them to continue their education, and

to furnish an incidental experience in responsibility with practical affairs while they are being fitted for favorable entrance to a trade or occupation at seventeen or eighteen years of age or older.

The experience gained by those employed in the messenger service and similar occupations can be used as a basis for training which will lead to a career on the shipping and transportation side of business. Those who are to be fitted for entrance to mechanical occupations, such as printing, machine work, boot and shoe manufacturing, carpentry, cabinet making, brick laying, steam fitting, etc., would need more than theoretical instruction; an elementary experience at least ought to be given on the practical side of the work which they plan to enter. This will necessitate a certain amount of mechanical equipment in the school. The schools should discover the fitness of the different pupils for the various occupations, and determine what lines of work are the least overcrowded and offer the greatest opportunities.

#### SUGGESTIONS FOR A CITY OF ONLY ONE INDUSTRY. — PROGRAM FOR THE TEXTILE BUSINESS.

The most difficult problem is found in connection with the juvenile work in the textile business. The difficulty in dealing with it is two-fold. (a) As it is at present organized, a small number of men and no women are required for the positions which correspond with those of the superintendent, foremen and their assistants in other industries, thus reducing the opportunities for promotion to positions of leadership. (b) As these positions are usually the only ones requiring any great amount of training or skill in the community, and because the textile business is usually the dominant one, there are only a few opportunities for skilled work in other employments. Such a problem is presented in a city like Fall River, where the textile business is the only large industry in the city and requires only a small amount of skill on the part of the majority of the individual operatives.

#### *Organization and Amount of Time.*

For this industry two kinds of part-time classes might be organized: (a) classes made up of those who can devote not more than five to eight hours a week to the school, such classes to deal with the majority of young workers found in the business; (b) classes made up of those who show special ability, and who can give more time to a school for special training, such pupils to devote half their time to school and the other half to work. From the standpoint of the school, it would make little difference whether these classes alternated between the factory and the school by months, by weeks, by days or by half days. It was found that many mills had "overseers" or foremen who had worked under the English half-time plan. These men were inclined to favor a change every half day or every other day, as is the

case in England. For example, if they changed every half day there would be two sets of young workers, each trained to do the same work, one group working in the morning in the mill and attending school in the afternoon, while the other group would have been in school in the morning and would go to the mill in the afternoon. Those men who were not familiar with the English system, when the different plans were explained to them for the first time, were inclined to favor the alternating weekly plan.<sup>1</sup> Such an arrangement is now working successfully in one mill in Fitchburg with a selected group of boys who are only a small part of the total number employed. This plan is recommended where the mill management does not show a preference. As this plan requires doubling the number of young workers to keep up production, and reducing their pay by approximately one half, it is felt that it will have to be confined to comparatively few of the total number employed. The mills are usually so anxious to get young help that whenever the school authorities are ready to go to them and say, "Here are 30 boys who are anxious to continue their education, but they cannot give more than half their time to schooling. Will you take them on a half-time basis, 15 one week and 15 the next," the management will be willing to do this, as it will increase their working force by 15 and will tend to give them more earnest, purposeful young people.

For the great mass of workers in the textile business, half their time for three years would not be required to give them a training which would enable them to reach their greatest skill as specialized operatives, probably five to eight hours per week would be sufficient. Taking this amount of time from the factory would require a working force of about one-sixth more.

#### *Subject-matter.*

With a group giving one half of their working time to school training, the school should set itself the task of preparing boys for what might be termed the maintaining occupations in that industry. Training in such lines as carpentry, machine work, mechanical drawing, electricity and the maintenance of power service cannot be given in any adequate way while the worker is employed in the mill. A general understanding of the textile business and a knowledge of what the machines are expected to do will be necessary in order that they may be able to erect machines, keep them in repair, line up shafting, install motors, run wires, conduits, piping, and be generally adaptable in plants which have a large amount of steam piping, electrical conduit, wiring, shafting, belting, pulleys, etc. If these things are taught, to-

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<sup>1</sup> Very few of these men favored any plan which would increase the amount of work which they would have to do in looking after their help, and stated that these things could be done provided (1) that the law required it, and (2) that they could get a sufficient amount of extra help. See discussion of amount of help available under Appendix E, "Practicability," pp. 103-104, 110.

gether with English, related mathematics, history, civics, etc., these boys, even though they are in the textile business in the same capacity as those who have had no such training, will have a larger opportunity, which is twofold. First, on account of their larger training, after successful experience in the business as operatives, they will be in line for promotion as second hands, overseers and possibly superintendents, if they show ability for such positions; second, if they have not the personal qualities which would enable them to fill executive positions and control others, this training will at least prepare them to understand their machines better, and will fit them for such positions as mill-wrights, repairing machinists, electricians and steam fitters.

For those who cannot devote more than five to eight hours per week to a part-time school, the training should aim to fit for the most highly skilled occupations in the mill, so that at the age of seventeen or eighteen, boys will have had training and experience in such work as weaving, loom fixing, mule spinning, etc. These occupations can be learned in a comparatively short time, and they pay a wage which would tend to stop a great deal of the idleness which exists at the present time.

Any system of training for the textile industry should aim: (a) to establish a substitute for the old apprenticeship system in the mill; make the boys feel a responsibility to their employer, and make the employer feel an equal responsibility for the future of the boys after they get beyond the point where they are no longer contented with a boy's work and pay, such as that of bobbin boys, doffers, etc., by training them for a department which employs men rather than to allow them to become disgusted with all mill work, as is now so often the case; (b) to establish through the school an agency which will look after the interests of the boys and girls in the community as a whole, know where they are at work, what they are doing, how successful they are, and what their future in the business might be with the right kind of effort and training. The school should, with the proper co-operation with industry, do much to stop the present purposeless shifting and drifting, and make young people see that their future lies in work, not in idleness.

In a textile center the industrial conditions are such that it is possible to give but little training which will open an industrial future for girls other than that offered by the mills. A part-time school might offer some instructions to make for a general understanding of the industry, at least an understanding of the work and system of the department in which they are employed, together with the keeping of such accounts and records as are required by the overseers of these different departments. Any vocational training which will enable them to do other work better and with the least effort should be offered.

Where girls are unsuited to the kind of work which they are doing, or when the task becomes physically too exacting, the school should give training for another department or for a less exacting task.

A large part of the time of the girls in the textile industry should be devoted to the household arts, dressmaking, millinery, personal hygiene and simple home accounts.

When not more than five to eight hours per week for three years can be devoted to the school, the work offered should be along these lines rather than along the line of vocational training for the mill.

The largest purpose of this kind of instruction for girls should be to relieve the monotony of their employment, and give a training which will make for the betterment of living conditions and the improvement of homes of the second and third generations of our new Americans.

#### *Equipment for Textile Part-time Education.*

To carry out a program such as is outlined above, a few of the typical machines will be found necessary. In the cities of Fall River and New Bedford, the equipments of the present State textile schools are adequate, and should be made available for this purpose. The two other large textile centers, Lowell and Lawrence, are already supplied with equipment. In Lowell there is ample equipment in either the State textile school or the State-aided vocational school. In Lawrence there is quite a complete equipment in the State-aided vocational school. In the smaller textile centers it should be possible to have one or two discarded machines in the school for the purposes of studying the mechanical movement and adjustments, and making drawings of the different parts. In these centers, proper co-operation with the mill management should enable the instructor to take groups of boys to the mill for the study of machines and processes with which they are not familiar. The school, whether in the large or small center, should give the theoretical instruction, illustrating it by demonstration with the apparatus, but the actual experience and practice should be given in the mill, which will mean the closest kind of co-operation.

In centers like Chicopee, Holyoke, Lowell and Fitchburg, there is considerable opportunity for training for the metal-working industry, and, in the case of Lowell, for the shoe business. In these and similar cases the schools should have equipment upon which young people can get some elementary practice and the experience which will enable them to gain favorable entrance to these occupations. In all cases they should have some machine, carpentry and electrical equipment, because of the importance of instruction along these lines for what has been termed above the maintaining occupations of the textile business.

#### SUGGESTIONS FOR A PROGRAM OF TRAINING FOR THE BOOT AND SHOE BUSINESS.

Under the present system of manufacturing shoes there are about one hundred and eighty different operations, each performed by a specialist. This industry is probably more minutely subdivided and

specialized than any other in the Commonwealth. The majority of the foremen and superintendents in the business learned their trade either before or during the transition period, when it was possible to learn the whole process of making a shoe. There appear to be a few specialized operatives who also have a considerable knowledge of shoe manufacturing. These are among the most highly paid and most intelligent men in the business.

The claim is made by manufacturers that the foremen and superintendents trained under the old methods are fast dropping out, and the system of manufacturing is not developing men to take their places. They claim (a) that general vocational training which would make for an understanding of the different machines and processes, factory organization, costs of material and manufacturing would develop a kind of intelligence and give experience which would enable those possessing the personality and executive ability to become foremen, superintendents and salesmen on the road; (b) that all young people who intend to have a future in the business should, in the beginning at least, have the kind of training mentioned above so that those who cannot fill executive positions will develop into the kind of specialized operatives so much needed, those who know why they do things, who understand the relation of their own operations to those of others, who can tell when a thing is wrong, why it is wrong, what needs to be done to correct it, and understand that if it is done wrong it is likely to spoil work or cause trouble in succeeding operations.

#### *Organization and Amount of Time for the School.*

Only 5.6 per cent. of all the shoe workers in the State are estimated as being under seventeen years of age, so that the problem of getting enough young help is not a serious one. A considerable amount of time is necessary for a program of training for the shoe business. From the standpoint of vocational education the alternating weekly plan could be operated with profit to the pupil for a period of at least three years.<sup>1</sup> This could be followed by instruction for five to eight hours per week for those who wish further vocational training for any special line or department, such as special phases of manufacturing, purchasing and selling. Such work as the latter should be done with selected groups who could probably be spared by the management for a time each week, or, if not, so released that this instruction might be given during the dull season. Such classes should be open to all over seventeen years of age who have had a sufficient training in the shoe business so that they could profit by the work offered. The half-time plan should be so modified for the shoe business that during the periods of great rush all the time could be devoted to the factory if their services were required, while during the dull periods, or when the factory is practically closed, all the time could be devoted to the school.

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<sup>1</sup> Alternating plan to work as described on p. 133, "Textile Program."

*Programs of Training for the Shoe Business.*

A program of training for the shoe business should be both liberal and vocational. About two thirds of the time given to the school might well be devoted to practical shop work, with such related technical study as drawing, both mechanical and pattern drafting, mathematics, the study of factory systems, danger points in the operation of machines, methods of marketing goods, problems of labor, labor laws, and all questions pertaining to the relation of employer and employee and the reasonable obligations of both. The remaining time could be devoted to what might be called a more liberal training, to include the related work in English, history, geography and civics, — all to be taught in such a practical way that it cannot fail to interest and educate.

The practical work for boys should include elementary experience in all of the operations found in the making of the shoe, to be followed by specialization on three or four different machines or operations, and a pretty thorough knowledge of the work of one department. Such instruction and practical experience for three or four years should give all boys entering the industry an equal opportunity, and at the end of this time those possessing special ability should be given the opportunity for further training of a more highly technical nature. A school offering such courses might well be located in the city of Boston for the benefit of the shoe industry in the State as a whole. Such a technical shoe school should benefit at least four different groups of people: (1) young people between the ages of fourteen and seventeen employed in the shoe business in Boston who could give half time to attendance; (2) those in such shoe centers as Brockton, Lynn, Haverhill, Marlborough, etc., who have attended local half-time classes for three or four years, who have shown ability and wish to learn about the manufacturing of other grades of shoes made in different parts of the State, and to receive the higher technical instruction in shoemaking as a whole; (3) the older workers employed during the day in the shoe business of Boston and vicinity who wish to attend evening classes; (4) the older workers employed in the shoe business outside of the metropolitan district wishing a broader training who could attend during dull seasons.

The vocational training required by girls need not be as broad in its scope as that suggested above. The girls and women in the industry are, on the whole, employed on two lines of work, namely, stitching and packing. They learn these operations in about six weeks, and beyond giving them the training for this work in a more thorough and systematic way, together with simple instruction in department accounting, it is difficult to see what vocational training would be of any practical value. The girls and women in the shoe business are paid a good wage as compared with those in other lines of work requiring similar ability, so from the economic standpoint there would be nothing



gained by offering training for another occupation. The school can, however, give these girls valuable courses in the science and art of home making, dressmaking, millinery and personal hygiene.

### *Programs of Training for the Machine Business.*

More has been done along the line of working out programs for the machine industry than for any other. From these experiments we have learned that this industry, which is much more complex than the textile business, and more varied as to product and methods than the shoe business, is well adapted to a plan of training which allows some groups to work one week in the shop and the next week in the school. In some machine shops the plan of devoting an hour or so each day to school work has been tried, but the most common practices are the alternating weekly plan, and the plan whereby five hours out of one day each week are devoted to school work. In the case of the half-time plan, production is continuous and no machines are idle, whereas in the case of the latter plan the places of the workers are not filled while they are in school.

### *Amount of Time.*

To cover a comprehensive course of training the half-time plan operated for a period of three or four years is preferable, and is recommended both from the standpoint of the school and the standpoint of the industry.

### *Program of Work.*

Some thirty years' experience in technical and trade schools in the teaching of machine and related technical work have shown that valuable training both in the theory and the practice of this work, can be given in a school, and that young men receiving such instruction are adaptable and successful in the business. A comprehensive part-time plan must provide for instruction in the related technical studies, drawing, machine design, mechanics, etc. Since few, if any, shops give an adequate training and all-round experience on the different machines in the shop, the part-time school will have to supplement the practical work of the factory by the necessary demonstration and instruction in the proper operation of machines and methods of doing work.

Where proper co-operation between the shop and the school exist, it should be so arranged that the boy can be changed from machine to machine while he is working in the shop. In this case the shop work of the school can be reduced to a minimum, but we have no evidence yet to show that such a plan of co-operation can be brought about that the practical work of the school can be entirely eliminated. This investigation has shown that only a small percentage of the boys now working under existing plans of co-operation get the necessary breadth of training in the shop.<sup>1</sup>

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<sup>1</sup> See conditions in machine shops, Appendix C, p. 65.

Where only five hours per week are given to school instruction, the work should be distinctly vocational, and the time devoted to drawing, shop calculations and mechanics. The instructors in the school should, however, know just what these boys are doing in the shops, and there should be such co-operation with the employer, foreman and superintendent that the boys will be changed from machine to machine and from department to department to enable them to get the broadest possible practical experience. Where one shop is so equipped or is doing such a class of work that it is unable to offer such an experience, the school, through its instructors, should work out a plan whereby there can be an interchange of boys between the different establishments.

#### PROGRAMS FOR CONFECTIONERY MANUFACTURING.

This industry is usually found in the large centers of population, notably in Boston and vicinity. Because of the low pay and the small amount of skill required, it seems to draw those of the least ability and education. It seems to take as long to learn to do such skilled work as packing as it does to learn some of the skilled operations performed by women in the shoe business, but this may be accounted for by the fact that a group of less ability enters this industry, and it naturally takes them longer to learn. It is probably true that the practical work of the candy factory can be better learned in the industry itself than in a school.

#### *Amount of Time and Suggested Programs.*

If part-time instruction for a group employed in the candy industry means a reduction in wage, the economic condition of the families employed in this industry is such that they probably could not stand the loss of more than four or five hours per week. With this amount of time devoted to school instruction, it would hardly be practicable to offer more than training in the household arts. Where special groups could give half of their time, the school could probably give training which would extend their general education, as well as practical instruction in power-machine operating, dressmaking and millinery, and discover if these girls could be fitted for any of these lines or for department store employment.

#### PROGRAMS FOR DEPARTMENT STORES.

The girls and boys who enter this employment have a direct use for more general training in reading, writing and arithmetic than almost any other group. They have, on the whole, progressed farther in school, but they seem to be as much in need of instruction in the practical applications of these subjects as are the individuals of any other group. The ability of the part-time school to give such instruction has been demonstrated beyond any reasonable doubt. The work done in

training for salesmanship in department stores seems to have demonstrated the ability of the school to give training which will fit for other departments of the store not yet reached, and to give a training for young people employed in the mercantile business in general, including the errand and messenger service. For a further discussion of this phase of the problem see Appendix G, by Mrs. John T. Prince.

#### PRINTING AND PUBLISHING PROGRAMS.

Printing and publishing should, for the purpose of this study, be considered under two separate heads: (a) printing, (b) binding.

The printing trade requires a very high degree of skill on the part of practically all its workers; while the work in the binderies could better be compared with that in the machine industry, in that it employs a large number of people with little skill as specialists on one machine or operation.

From the advance sheets of the United States Census for 1910, Table I, Appendix A, it would appear that in 1909 there were 768 young people between fourteen and seventeen years of age employed in this line of work in Massachusetts. Of these, 606 were boys and 162 girls. The printing trade takes boys under sixteen years of age, but rarely takes girls under this age. The binding trade, however, employs a larger percentage of girls, and the females reported were probably employed mainly in the binding.

Programs of part-time schooling, then, should deal mainly with the printing trade, and aim to train compositors and pressmen, linotype and monotype operators. The girls employed in the binderies could be given little if anything in the way of vocational training, and the program would be similar to that suggested for confectionery establishments.

#### *Amount and Arrangement of Time.*

It appears from interviews with employers and the study of the work in this industry that any one of three plans could be successfully operated in connection with the printing business.

There is a great deal along the line of vocational training which can be given in this trade, and the largest amount of time possible should be devoted to the school, preferably one half the working time. The time devoted to the school could be either every other week, half of each week or half of each day.

The Lakeside Press of Chicago is now successfully operating a part-time school, and in answer to the question as to the best arrangement of time the following statement is made:—

We run our school half-days instead of week about, for the reason, I believe, that this is more effective. A boy, after he has spent three and a half hours in the school, can then go into the factory without having his mind tired, and I believe that it brings the work of the boy in school in

closer touch with his work in the factory. Of course, if such a school is not in the same building as the factory, the week about would be a more practical scheme.

If the school is located near the plant, the plan suggested above would work successfully, but on the whole it is probably true that the weekly plan will be found more feasible for Massachusetts.

There are large numbers of small printing establishments employing one or two men and a boy. These establishments usually get out a small local paper and do job printing. It has been found that they are rushed for about two or three days a week and require the services of a boy during this time, but could get along without him the rest of the week. An arrangement is now made with three different establishments in Newton and vicinity whereby six different boys are working in a printing office part-time and attending the vocational school the rest of the week.

#### *Suggested Programs.*

A course in printing should be divided into two parts: training for compositors and training for pressmen. The school training should give first experience in both press work and composition to make for a general understanding of the business, and later allow the boys to specialize in the department for which they seem best fitted. One half of the school time might be devoted to practical composition and press work, and the other half to English, history, civics, mathematics and design, a great deal of emphasis being laid on the latter. The printing trade is more and more in need of men who cannot only set type and run off work on the press, but who can produce pieces of work which are really beautiful from the standpoint of design. The International Typographical Union has already recognized this principle and offers an excellent course in design.

The following suggestions embody a few of the principles which may be covered in a course of training for boys who intend to be compositors or pressmen: —

#### *Course of training for boys who intend to be compositors.*

1. How to stand in good position at the case.
2. How to hold the composing stick.
3. How to space a line correctly.
4. Display composition.
5. Book composition and makeup.

#### *Course of training for boys who wish to become pressmen.*

1. How to care for and oil the printing press.
2. How to feed a press.
  - (a) Register.
  - (b) Use of the throw off.
3. How to keep up the color.
4. How to make ready.

In their vocational opportunities, girls are usually limited to the composing room, and large numbers specialize on the linotype and monotype keyboards. The following is suggested as a part of their vocational course:—

*Course of training for girls who wish to become compositors and keyboard operators for the monotype.*

1. How to hold the composing stick.
2. How to space a line correctly.
3. Practice in the use of the monotype keyboard.

In addition to these, the course for girls should include the work in household arts suggested in the other programs.

A statement from the Lakeside Press as to why their school was started could well be made to apply to the conditions and needs found in the printing trade in Massachusetts. Their statement follows:—

The reason the school was started was to train our own apprentices. We found that the ordinary compositor was not trained thoroughly, but generally had picked up his trade in a small country shop where the equipment and practice were both poor. He had drifted into the city, joined the union and really acquired his metropolitan skill by holding one job after another until he had become competent to hold a job steadily. We felt that we could get very much better results by training our own boys, and we would also get an *esprit de corps* which we could not otherwise obtain. . . .

The direct inspiration for this school came to me through an account I read in the report of the Bureau of Commerce and Labor on the apprenticeship systems of Europe. A printing firm in Paris had had such a school for some eighty years, and it had worked successfully. . . .

We did not intend at first to take boys until they were sixteen years old, as the laws of Illinois forbid a boy younger working more than eight hours a day, and our factory runs nine hours for five days and five hours on Saturday. We found, however, that we could not obtain boys of the age of sixteen who had not been ruined by the two years of incidental employment and loafing around the streets. We accordingly made up our mind that we would take a boy directly when he graduated from grammar school at fourteen years, and keep our hand on him all the time. We do not take boys who do not graduate from grammar schools before they are fifteen, and we do not take boys who have worked anywhere else. . . .

We think that the school is fulfilling its mission, and while it has been in existence only four years, and our oldest boys are just finishing the fourth year, I am confident that these boys are much better workmen than the ordinary boy of that age, and also are receiving much better general education.

## CONCLUSION.

A comprehensive plan of part-time schooling will not leave the consideration of the problem to the time when the child leaves school and takes the first job which offers an opportunity for employment, whether he is fitted for it or not, but will deal with him before he has gone beyond the reach of the school. An adequate working knowledge of the needs and possibilities of all its pupils, and the making of plans for meeting these needs, is a problem at least as large as that with which the schools are now dealing, and one which cannot be handled alone by a vocational or part-time system, or any other which is set off and apart from the agencies which first deal with the child.

Every large school system needs an assistant superintendent whose special duty it should be to aid the general superintendent in organizing and supervising all such work as relates to the child who is not going to high school or college. All vocational, trade, part-time and continuation schools, and all the manual activities of the regular elementary and high schools, should be under his direction. In addition to this, there should be an attendance, school census and record department which should have the facts about all the children in the city, those not yet in school, those in school and those who have left up to the age of at least eighteen years. The organization of the right kind of attendance department requires a grasp of the whole educational problem, and should not be left to a clerk or a police officer. A department of educational and vocational guidance, related to every other department of the school system and to business and industry, should be organized and placed under the supervision of an educator with special qualifications for the kind of work. Such a department should co-operate closely with the attendance department. Principals and teachers in the elementary schools should be able to turn to it for advice as to the educational and vocational opportunities in the community, and to secure help in deciding what is the best kind of training for different people with different needs. When these departments are properly organized, it will be quite possible to develop part-time or any other work needed in the community. In a small school system all of these functions will of necessity be combined under one head. If the community is so small that it is financially unable to employ a person to do such work, then it should unite with another community which is similarly situated, in which case the State should exercise more careful supervision than would be necessary in the larger community.

#### WHAT IS THE NEXT STEP IN THE DEVELOPMENT OF PRACTICAL EDUCATION IN MASSACHUSETTS.

The next step in this State should be to urge each community to study its own needs, to ascertain the real facts about the schools, the children and the industries, and to create a public sentiment which will

make the community as a whole really face these facts, and do at least as much for the child who is going to work at fourteen as most communities are now doing for those who go to college. In this connection it is suggested that such information as the following be collected:—

*A. Information to be obtained regarding the Schools and the Children.*

- (1) How many children of each age are there in the community?
  - (a) How many are in school?
  - (b) How many are at work?
  - (c) How many are neither in school nor at work, and why?
- (2) How many age and schooling certificates are granted each year?
  - (a) For what industries are they taken out?
  - (b) What are the ages of the children to whom these are granted?
  - (c) What grade have they reached in school, and if a low grade, why?
  - (d) Are they physically able to do the work which they plan to undertake, and how is it known what the physical requirements are?
- (3) Of the children in the grades, how many are one or more years behind their classes?
  - (a) Is it due to overcrowding in the class rooms?
  - (b) Is it due to the presence of defective or foreign-born children in the classes?
  - (c) It is due to work which is ill suited to their needs and to poor teaching?
- (4) Of the children in the grades, how many plan to go to high school, and what are their chances, financial or otherwise, of doing this?
- (5) Of the children in the high school, how many plan to go to college, and how many can really do so?
- (6) What is the best kind of training that can be offered to those who are not going to college?
- (7) What means are now used to find out what are the future plans of parents and children for the life work of the latter?

*B. Information to be obtained regarding Industries in the Community, both those which employ Children and those which do not take Young People under eighteen years.*

- (1) What kinds of work do children enter upon leaving school?
  - (a) How many are skilled and how many are unskilled occupations?
  - (b) What is the future in each?
  - (c) What training can be given in school which will enable them to gain a better entrance to the industry?
- (2) What are the undesirable industries from the standpoint of ability to advance?
  - (a) Should we train away from such industries?
  - (b) If so, what kind of training should we give?
- (3) What kind of training can be given those already in the industry which will make them more efficient workers and fit them for promotion?

*C. Questions to be considered in meeting these Needs.*

- (1) What can be done with children who neither work nor go to school?
  - (a) How many are capable of work and how many are not?
  - (b) What can be done in the way of vocational education?
  - (c) What can be done for children and adults already at work?
    - (1) Through part-time day courses. (2) Through evening courses.
- (2) What schemes of part-time work have been inaugurated in other cities?
  - (a) How were they started?
- (3) What is the best way for this particular community to start part-time or any other vocational work?
  - (a) Are there manufacturers in the city who will co-operate with the schools?
  - (b) Can they furnish teachers?
  - (c) Would part of their plants be available?
  - (d) How many young people could be accommodated in such a plant?
  - (e) How should they be selected?
  - (f) How should the work be supervised?
  - (g) How much would it cost the community for such instruction?

Those who have the educational interests of the city or town in their keeping might well secure the co-operation of employers and others in studying this problem. Such a study recently made in the city of Quincy resulted in a report with recommendations to the school committee and city government that more practical work along the lines of manual training, cooking and sewing be offered to all children in the grades; that a full-time day vocational school be established for those who can profitably devote from one to three years to a school with practical courses, and that for those who are already in the trade part-time courses be established. This study revealed the real needs in the community, interested those who are employing young help, showed them how they could contribute to the solution of the problem, and made those responsible for the finances of the city realize that, as a matter of justice, something should be done to make the schools meet the needs of all the children in the community.<sup>1</sup>

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<sup>1</sup> A similar study is soon to appear, "A Trade School for Girls," which is a report of a preliminary investigation in a typical manufacturing city, Worcester, Mass., made by the Department of Research of the Women's Educational and Industrial Union of Boston. Three other studies which will throw light upon the industrial training for girls will be published in 1913 by the Department of Research, one on dressmaking, one on millinery, and the third a study of the boot and shoe industry.



## APPENDIX G.

## PART-TIME EDUCATION IN COMMERCIAL ESTABLISHMENTS.

MRS. JOHN T. PRINCE.

## INTRODUCTION.

In the year 1911 there were approximately 4,000 boys and girls between fourteen and seventeen years of age in the department stores of Massachusetts; or one tenth of all the young people at work in this State. As a group they are poorly educated, of poor home traditions, undernourished and unambitious; yet it is from this group that many of the leaders in commerce have been in the past largely drawn. The question, therefore, which this report attempts to answer is, how may this class be further helped by education? And in what form should that education be given? What are the needs of this group, and the needs of the store and the community in relation to this group, and how should these needs be satisfied?

There are three chief sources of material to be used in a consideration of this problem: (1) the published report of the Commission on Minimum Wage Boards; (2) personal interviews by agents of this investigation with managers and superintendents of department stores; and (3) the records of the salesmanship school of the Women's Educational and Industrial Union, to which we shall refer hereafter as the Union School of Salesmanship.

The report of the Commission on Minimum Wage Boards furnishes material on the economic condition of the women of the department-store group, while the personal interviews have presented the point of view of managers as to the needs of the store in its relation to the young workers. The material of the School of Salesmanship is of unique value. The school has kept an exact record of the educational and industrial history of each pupil in the school up to her entrance, her progress during training, and an annual record of her position, firm and wage afterwards. It is therefore possible to discover to some extent what effect vocational training actually has had on the girl who has been trained. It is fair to assume that whatever effect the school has had on the 247 girls of whom we have complete records (about one half of the total enrollment of the school), it would be equalled by similar training for the much larger group investigated by the Minimum Wage Commission, since the group reached by the school was

slightly below the level of the larger group as to nationality and also wage. That is, the group of the school was, measured in terms of dollars and cents, less capable before their training than the general run of department-store women. The importance of such a record of an actual experiment with a group in no way exceptional is absolutely beyond estimate.

TABLE I. — *Number and percentage of store employees who were native and foreign born.*

	BY THIS SCHOOL GROUP.				BY MINIMUM WAGE INVESTIGATION.			
	FIRST GENERATION.		SECOND GENERATION.		FIRST GENERATION.		SECOND GENERATION.	
	Num-ber.	Per cent.	Num-ber.	Per cent.	Num-ber.	Per cent.	Num-ber.	Per cent.
Native born, .	210	81.7	83	32.4	2,207	83	880	33.0
Foreign born, .	42	18.2	174	67.6	454	17	1,781	66.9

Table I shows the number and percentage of women who are of the first generation of native or foreign birth; that is, it shows the number and percentage of those who were actually born in this country and those who were not. It also shows the number and percentage of those who are born of native or foreign parents; that is, of the second generation; and it shows this for two groups, the group attending the Union School and the much larger and certainly typical group investigated by the Minimum Wage Commission.

Table I shows that 81.7 per cent. of the Union School group are native born, as compared to 83 per cent. of the minimum wage group; that only 32.4 per cent. are born of native parents, as compared to 33 per cent. in the minimum wage group. Such a close relation in these proportions indicates that the Union School group was not selected.

TABLE II.<sup>1</sup> — *Ages of women in retail stores in Boston.*

	AT TIME OF ATTENDANCE IN SALESMANSHIP SCHOOL.		IN ALL BOSTON STORES IN THE MINIMUM WAGE INVESTIGATION. <sup>2</sup>	
	Number.	Per cent.	Number.	Per cent.
Under 16, . . . . .	1	.4	109	6.0
16 to 17, . . . . .	32	12.5	282	15.6
18 to 20, . . . . .	116	45.7	442	24.4
21 to 24, . . . . .	79	30.9	417	23.0
25 and over, . . . . .	28	10.9	561	31.0

<sup>1</sup> See Table IV.

<sup>2</sup> From report of Commission on Minimum Wage Boards, p. 96.

Table II shows the number and percentage of women at each age in the Salesmanship School and in the larger group investigated by the Minimum Wage Commission. The same fact may be inferred from this table as from Table I. The pupils of the Union School came largely from the group which contains the greater proportion of department-store workers, — 45.7 per cent. from the group of eighteen to twenty years of age. There were few very young girls and few, though not an inconsiderable proportion, 10.9 per cent., twenty-five years of age and over. In a sense, the Union School group is typical of workers in department stores.

In 1905 and 1906 the work of the Union School was still in its experimental stage. It began with a small class whose only selling experience was that furnished by the food sales room of the union, — an experience entirely different from that of department stores. In January, 1906, a second class of six members took up the work. These girls, too, had only the limited experience which the union itself could offer in selling. The year following six of the leading stores of Boston joined to co-operate with the school. The superintendents of these stores formed an advisory committee for the school, meeting once a month with the president of the union and the director of the class for discussion and conference. These meetings had a reciprocal influence; they kept the school alive to meet the real needs of the store, and they kept the store alive to the value of training. They also cemented the bond between the store and the school, — a factor which has largely contributed to the success of the school.

The policy as planned with the advisory committee at this time was that candidates should be sent from the stores and admitted to the school if approved by the director; that they should sell in the stores on each Monday, and should be paid \$1 for this service. This arrangement was found to be unsatisfactory. The girls needed more actual experience in the store, and the most promising candidates could not afford, or were not willing to afford, the loss in wage incurred. After consultation with the advisory committee the time schedule was changed so that the girls spent half their time in school and half at the store, and for this half-time work were paid \$3. They came to the school from 8.30 to 11 A.M. and from 4.30 to 5.30 P.M.

The only important change since then has been in the hours of attendance and the wage. The pupils now come from 8.30 to 11.30 A.M., and do not return to the school in the afternoon. They are paid the full wage, which they receive at the time of entering the school; no deduction at all is made for the time spent in the school. This means that the school has passed the experimental stage, that it is an established success in the opinion of the stores which are trying to have the school enlarge its membership, and also in the opinion of the workers, who continue to apply in much greater numbers than can be admitted. The records of this school and the experience of its director, together with

the material of the Minimum Wage Boards Commission and the personal interviews of the agents of this investigation, should be sufficient to form accurate conclusions as to the need for and the practicability of part-time schooling.

## II. NEED FOR TRAINING.

In comparison with the other young workers in industry the employees of department stores seem to be relatively more fortunate in education. They are not so frequently forced by the pressure of poverty from the school as soon as the law ceases to hold them, and they are not so largely a "backward" group. Only 7 per cent. left school before the eighth grade; the majority, 56 per cent., left in the eighth and ninth; more than a third, 37 per cent., went into high school. The demands of the stores for as great an amount of schooling as they can get in their workers is increasing and may make these young people, from an educational point of view, a selected group in the larger mass of boys and girls at work. One store will not accept any one in any department of the store who has not a grammar school diploma, and also refuses all who are under seventeen years, because the very young workers are not educationally fit.

TABLE III. — *Age left public school.*

From the records of Union School of Salesmanship.

	AGE LEFT.							
	13.	14.	15.	16.	17.	18.	19.	20.
Number, . . . . .	20	72	60	38	30	20	4	1
Per cent., . . . . .	8.2	29.3	24.5	27.7		10.2		

Table III shows the number and percentage leaving school at each age; 8.2 per cent. left school before the legal age; 29.3 per cent. left school at fourteen years; 24.5 per cent. left at fifteen years; 37.9 per cent. left at sixteen years or over, which is an unusually high proportion for an industry employing juvenile help.

Yet this proportion is not what it might be if the schools offered what would hold the interest of these young people longer. Forty-one per cent. left because school failed to interest them, either because it did not offer the means to livelihood, or because they were behind their class, or because they wanted to work. Only 40 per cent. were forced to leave; less than half came from families who needed either the wage they could earn or their work in the home. The remainder left school for various personal reasons. Two fifths could not have stayed in school no matter what attractive or valuable training might be offered, but two fifths of the girls might, it seems, have been kept longer in

school if they had been offered a course sufficiently practical to arouse their interest.

Now, while measured by the age they left school and by the grade they reached in school, these children might seem prepared, yet measured by the knowledge they have acquired they are seriously handicapped. Although 93 per cent. of these girls have spent seven years or more in school, they have not acquired the rudiments of an education. It was found at the Salesmanship School that it was necessary to begin at the very beginning in arithmetic. One test question, "How much would  $\frac{7}{8}$  of a yard of a ribbon cost at 19 cents a yard?"—a problem not uncommon in stores,—brought answers from 1 cent to 5 cents out of the way, and, further, brought out the fact that they really did not know anything about the process of arriving at an answer. The usual method was to ask the more experienced girl next to them, who had gained her knowledge by asking the girl next to her,—a process fraught with all the hazards of uncertain memories and remote traditions. The voice of store managers and superintendents is almost unanimous in condemning the unfitness of school training for practical work; they estimate that about half of those admitted to the stores are forced to leave and go into an unskilled trade, and that 75 per cent. fail of promotion because they lack the fundamental three R's. There is evidently a very great need for more efficient general training to prepare the necessary foundation for any life work. These young people lack the confidence and the reasonable hope that makes ambition possible; they are cut off at the very start from many chances of success.

There is a training in the elements of commercial life just as necessary to special success as the fundamental education supposed to be given in our grammar schools is to all success. These elements are the "tools of the trade." A knowledge of the selling points of goods, familiarity with store system, quick appreciation and practical knowledge of the method of handling the different varieties of customers,—these are things which are the three R's of the selling business. It is absurd to expect the girl behind the counter to pick up this knowledge. After years of experience and blunders she has an empirical knowledge of what one can and cannot say to customers, what the qualities of the goods she sells are and how the mechanics of selling should be conducted. But the principles which underlie this knowledge, which would have made its acquirement infinitely easier and its application so much surer, she will never know unless she is of an exceptionally inquiring mind. She knows that a serge wears better than a broadcloth, but to the customer's *why* she can only answer in vague, general terms that it does, because everybody finds it so.

To the girl the training means all the difference between a dull task mechanically performed and an opportunity to exercise every atom of brain and knowledge in a game of skill, competing with other eager

young minds for high rewards. Instead of being eight hours of mechanical work they may be hours of keenest living and largest opportunity for the development of personality. Add to this interest in the work the happiness of efficiency and the comfort of prosperity, then the universal testimony of the girls to their affection for the school will be no cause for wonder. The conclusive argument for the value of training to the young worker is to be found in the accompanying table, which shows that while before their training the Union Salesmanship pupils as a group were below the normal group investigated by the Commission on Minimum Wage Boards, after it they were decidedly above it.

TABLE IV.—*Comparison of earnings of group investigated by the Commission on Minimum Wage Boards with earnings of girls attending salesmanship classes before and after their training.*

	CUMULATIVE NUMBER OF WOMEN WITH AVERAGE WEEKLY EARNINGS OF —					
	\$4 and under.	\$5 and under.	\$6 and under.	\$7 and under.	\$8 and under.	Over \$8.
Minimum Wage Commission, .	353	554	973	1,375	1,672	845
Union School of Salesmanship:						
Before training, . . . .	4	32	56	136	159	21
After training, . . . .	—	—	1	29	77	56

	CUMULATIVE PERCENTAGE OF WOMEN WITH AVERAGE WEEKLY EARNINGS OF —					
	\$4 and under.	\$5 and under.	\$6 and under.	\$7 and under.	\$8 and under.	Over \$8.
Minimum Wage Commission, .	14.2	22.0	38.6	54.7	66.4	33.6
Union School of Salesmanship:						
Before training, . . . .	2.2	11.9	31.0	75.4	88.2	11.8
After training, . . . .	—	—	0.7	21.5	57.3	42.7

Table IV shows the number and percentage of girls at each wage before their training and after, as compared to the normal group presented by the Minimum Wage Commission; 31 per cent. received \$6 or less before the training; after the training only 0.7 per cent. received \$6 and under. Before training only 11.8 per cent. received more than \$8 a week remuneration; after the training 42.7 per cent. received more than \$8 a week. The Minimum Wage Commission found only 33.6 per cent. earning more than \$8 a week. That is, the training actually raised a subnormal group above the normal.

That such willing service must mean a very different return to the store from the haughty and unwilling attitude of the ordinary untrained saleswoman is obvious. These young women, besides showing such fundamental change in the spirit of their work, do possess the tools of efficiency, without which the most willing spirit must fall short. The stores need such training for their workers almost as much as the workers need it for themselves.

There is another interest very rarely touched upon in such considerations, but one that, here at least, should not be overlooked, — the interest of the public. Since little clothing is made in the home now it is no longer as possible for the housewife to buy intelligently, as formerly. It should therefore be the function of the salesperson to give advice, which has knowledge behind it, and to meet the individual needs of all customers. The good service they could do the world by expert understanding of the needs of different people and the possibilities of satisfying them is inestimable. From every point of view, therefore, there is a real and urgent need of vocational training for the young people in department stores.

### III. MEANS EXISTING AT PRESENT FOR TRAINING IN SALESMANSHIP.

Since the work began, nearly seven years ago, at the Women's Educational and Industrial Union in Boston, there has been a gradual awakening all over the country to the need of just that training which was devised and put into practice for the saleswomen of Boston. Largely through this influence schools of salesmanship have been established in stores and schools in Cincinnati, Cleveland, Kalamazoo, Chicago, St. Louis and San Francisco, with leaders trained by the organizer of the Union School. That is, the work which began obscurely and experimentally has answered so truly to a need that it has spread over the country.

Besides stores in these five cities, the Wanamaker stores have established schools under their own roof. The schools of the Wanamaker stores differ radically from those which are or have been connected with the Union School of Salesmanship. Here the boys and girls who have not a diploma from the grammar school are put under the instruction of regular public school teachers until they graduate. The store has done this to supplement the insufficient education of the young workers.

In Boston six stores send pupils to the Union School. Other stores have tried to have their workers admitted to the school, and the stores that have always sent pupils have tried to have the school enlarged so that it would take a larger proportion of those who need to come. Since it has been impossible to enlarge the school, the stores have, in three of these cases, established schools under their own roofs, which are carried on by teachers trained in the Union School. But stores

are not primarily fitted for educational work, and tend to narrow the training to just the mechanics of store work, — a knowledge of the sales slip and the store system, — whereas the public school can train for the larger issue of civic responsibility as well.

In Germany, the pioneer country in industrial education, there has been training in textiles for some time; but in no country and in no city of the world until it was established in Boston has there ever been anything resembling the course of salesmanship now taken as a standard in so many places in the United States. In this at least we are first in the field, — and it is still largely an open field. The whole number trained by the school in Boston is a very small proportion of the 4,000 which it is now proposed to educate.

### *Apprenticeship.*

It might be supposed that since there are so few vocational schools there must exist in the stores some more informal species of training, like the old apprenticeship system. This is not so. Formerly, workers were taken on young, who were expected to remain permanently. That is, the owner of a store had definitely the future prospects of the young helper in his eye when he entered the store. Now there is nothing of that sort. Provided the applicants will make tolerable cash girls or stock boys, nothing further, as a rule, is asked or required of them. They are admitted in vast hordes to this outer court, and those get to the inner temple who can. That is, they are simply given the opportunity to "pick up" some knowledge of the store and of goods, and all the responsibility for their advancement is on themselves. Yet these people who are expected to grasp knowledge eagerly and seek advancement boldly are still very young, somewhat less timid, perhaps, than their brothers and sisters in sheltered schools, but still little more than children. The stores complain that they cannot find enough capable people for responsible positions, yet they restrict the flow at its very source, by not attempting to choose or shape the training of the young people who enter the store in minor positions for the advanced positions which are so difficult to fill. And are they in fault in this? The problem is no longer the store's problem; it belongs to the State and the school.

Throughout the entire organization of the store it is the same. The workers absorb what scraps of knowledge lie on the surface, and on the strength of this some demand more pay, and a few, more responsibility. The vast majority do not know when they are worth more pay, and so are discouraged, or at least so little encouraged by this knowledge, which they themselves feel to be scrappy and uncertain and based on still more uncertain foundations, that they do not dare to undertake responsible positions even when they are offered to them. The stores, like the factorized industries, are caught in the eddy between the tide of apprenticeship, which is retreating, and the stream of industrial education and State responsibility, which is yet in its feeble beginnings.



*Possible Means of Education.*

It has, therefore, been established that the children in department stores need vocational and general training, and that it is necessary for the good of the stores and the public. The question then, becomes, what is the most desirable form for this education to take? Should it be given in evening school work; should the compulsory day-school period be extended to include it; or should it be given in some form of part-time school?

The first two possibilities are easily disposed of. It is impossible for a young person to do good work eight hours a day in the store and do good thinking for two hours in the evening. There are few people now who question the truth of this. The evening schools provide opportunity for the exceptionally ambitious, and it is agreed that even these are forced to slight either the day work or their school work, or, what is more disastrous, their health. Moreover, a part-time or day-school period would eliminate the social and moral disadvantages of the evening school, which is often misused by boys and girls from fourteen to seventeen years of age as a meeting place. If the part-time schooling is made compulsory between the ages of fourteen and seventeen the young people will not lose what was gained in the elementary schools; and the discipline of some regular work, so directed that it will hold them, will develop ambition and raise standards which will tend to make them want evening school when they are older and physically better able to stand the strain. This is actually one of the outcomes of the splendid continuation system of Munich. After finishing compulsory continuation school, at the age of seventeen or eighteen years, the boys then wish to continue at the evening schools. An extension of the compulsory day-school period would be possible for that 40 per cent. of the 4,000 who left school because it failed to interest them; but there would be no need to make the extension compulsory if courses were offered which would interest them. Automatically some portion of them would sift into the group staying longer at school. For the 40 per cent. who were forced by the pressure of necessity to leave school, any extension of the period of schooling would mean severe hardship. It should not be considered as possible at all. Even for those who leave school because they "hate it," it is not evident that it would be desirable for them to stay longer, even if the training offered were of a sort to interest them. They are a type interested much more in doing things than in studying, and are much more likely to be induced to think if they are offered things to do to think about. That is, for two fifths of the group part-time schooling is the only form which is economically possible; for another two fifths it is probably more desirable than full-time schooling. The question remaining for discussion is, then, is part-time school practicable? Can the stores prosper with it, can the children afford it, can the State manage to give it?

The answer to the first part of this question is necessarily more or less conjectural. Part-time schooling would mean that there would have to be some extra force to fill the places of those who are at school. Already most stores have a group of extra workers to fill the places of those who are ill; part-time schooling might mean some enlargement of this force. It would depend entirely on the months and the hours taken for the school. If the school is not opened in the rush seasons at Christmas and Easter, if it will be content with eight hours, or two mornings each week, there is no reason to suppose that the necessary number added to the force should be very large. It must be considered that workers who are at school are much more efficient than those absorbed in the dull routine of the day; that they are quite capable, except where the work is of such a mechanical nature as to require a fixed number of workers all the time, of performing their full work in the five sixths of the time ordinarily allowed. The pupils of the Union School of Salesmanship after a few weeks' training sell as much in half a day as they did formerly in their full day. Considering, therefore, the very great advantage which the stores would derive from properly trained helpers, it does not seem as if some slight addition to the extra force should prohibit part-time schooling.

The question of the possibility for the children of affording part-time schooling depends on the first question, — that of the store's attitude. The stores have to come to the point where they feel that training, efficient as it is in the school of the Women's Educational and Industrial Union, is worth the time of their workers at full pay. It is more than probable that they will feel the same way about a State school if they are convinced that it will be as efficient. That is, in all probability there will be, there should be, no question of the possibility of affording such training for the boys and girls in the stores. And this should not be considered philanthropy on the part of the stores; an enlightened self-interest would dictate the same position. The crux of the question lies in the efficiency of such schools; an inefficient school would be far worse than none at all, since it would check a movement already well under way.

The final point then, remains, can the State manage to give the training efficiently? There are few material difficulties. Such a school requires less equipment than any other; tables, chairs and a black-board are all that are absolutely necessary. A good textile exhibit is also essential, but this could be acquired gradually, and is in no way a prohibitory expense. Teachers are the one important and expensive part of the equipment, and care must be taken that enough teachers are ready for the continuation school before the training is made compulsory.

On account of the great demand for teachers, not only in Boston but in many other cities, a normal course for the training of teachers is

carried on in connection with the Salesmanship School. This course consists of the observation and practice of teaching in the school, with correlated store work and critical analysis of all work; advanced courses in education, applied psychology and textiles; and of actual store experience on Mondays and during holiday seasons. A six weeks' course in economics of industry is offered by Simmons College.

Of the 15 teachers who have taken the training, 9 were college graduates, 2 normal school graduates and 4 had no special training. The 8 now in training are all college graduates, most of whom have had teaching experience besides. The director is convinced that a broad college education is desirable for the best development of this work. The problems involve psychology, economics and ethics; and since the great end is to develop the *power* of the individual pupil, that he may come into his own and find that joy in his work which, after all, is the foundation of efficiency, the teachers must have teaching ability, right attitude to business and social vision. These teachers also, whether working in stores or schools, must have constructive ability to adapt the work to the particular problem in hand. With properly trained teachers great difficulties still remain in the educational deficiencies of these young people and the complexity of the problem of the stores. Only the fact that the seemingly impossible has been actually accomplished, and a subnormal group made more than normally efficient, makes the proposition seem practical at all.

In the true continuation school the large amount of training that is necessary for instruction in elementary school subjects would not be required, but if the work be given to them in the continuation school in the bare and abstract form in which it is presented in elementary schools, the pupils will fail here also from lack of co-ordination. Every item of knowledge should be shown to them in a form related to their work; they should be made to see and understand their need for just such and such knowledge in the store before it is given to them at all. They should, and they do, develop a real appetite for this definite, practical knowledge; and there naturally results a much swifter mental growth than that which follows on the forced feeding process of unrelated schooling. It further has the advantage of making the work appear as one whole, instead of dividing life into the academic and the practical, — the fallacious and immeasurably harmful division of common tradition. The training should be just as broad as it can be made and keep the interest of the pupils, touching not only all departments of the store, but all departments of knowledge which arouse the interest of the pupils. The primary object of all education is not merely to increase the value of our children for their future employer, but to make them, each one, happy, resourceful and mentally free and responsible. Viewed from this point it is fortunate that business efficiency involves to so great an extent a union

of just such qualities. Training for salesmanship means training for a very high type of manhood and womanhood, not incidentally, but first, last and always.

The working program of the Union School of Salesmanship keeps this aim in view throughout its practical program. In particular it strives to develop those qualities which would enable the pupils to succeed as saleswomen. What these qualities are was determined partly by a personal investigation of the needs of the average untrained salesgirl and a long acquaintance with her problems and discouragements, and partly through conferences with superintendents. The resulting needs were found to be: the development of a professional, responsible attitude towards the work; the development of a pleasing personality; the inculcation of habits of order and systematic attention to detail; instruction in the qualities of merchandise; and, finally, knowledge of the science of selling. The subjects taught have been directly chosen for these needs. For the development of a professional attitude toward the work alone there has been no specific course, because that is the keynote of all the instruction. Under the other heads, the following program has grown up: (1) To develop a pleasing personality: hygiene, especially personal hygiene, including a study of daily menus on the limited means of the saleswomen, ventilation, bathing, sleeping, exercise, recreation and proper clothing for comfort and health, as a part of business honesty; neatness in dress, and good manners toward the customer. (2) To develop habits of system and attention to detail: saleslip practice, a study of store directories, business arithmetic, business forms and cash accounts; it is here, of course, that the training in arithmetic comes. (3) Instruction in the qualities of merchandise: a study of color and line design, and of textiles. (4) The science of salesmanship: discussion of store experience, demonstration sales, the development in class of the principal divisions of the sale and the method of handling each, the development in class of a classification of customers and the proper method of selling for each, and, finally, lectures from buyers and other people of a wide store experience for general points. It has been the purpose, also, to arouse interest in the problems and opportunities of the wage-earning class, — the meaning of capital and wages, the just relation of income to expenditure, the use of leisure time, commerce and industry, the consumers' league, trade unions and civic responsibilities.

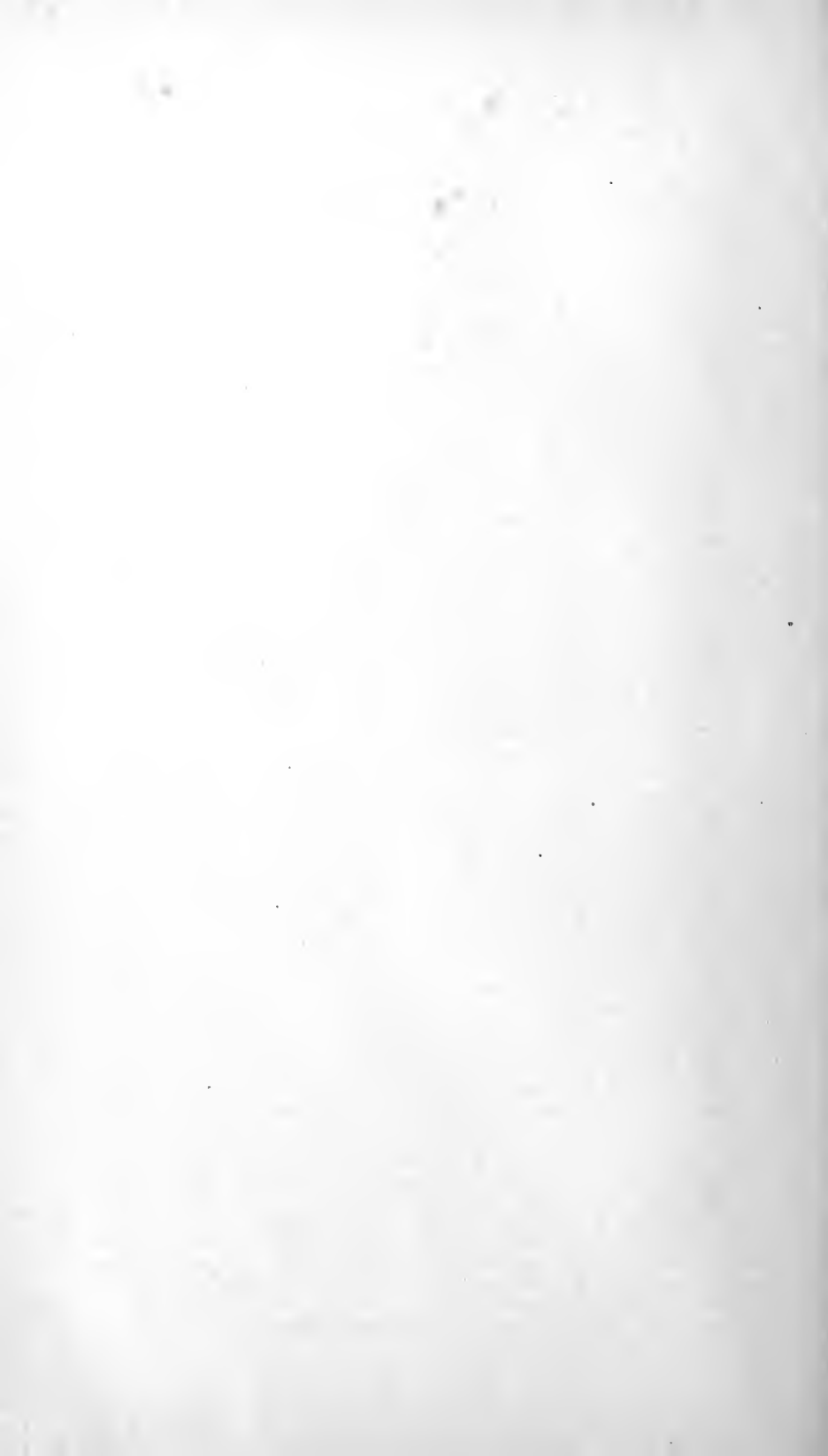
This program gives only a faint notion of the rich possibilities of the training. In the study of color and design in costumes these young people acquire a knowledge of the elementary principles which underlie all art, and which, therefore, furnish them with a key to the appreciation of pictures and sculpture, — an opportunity entirely closed to most people of such slight education and such uninspired surroundings; the study of textiles, means for the simpler understanding of the

highly complex modern processes,—a study of the simple processes from which they evolved. That, in turn, leads to the study of the people and the times in which the spinning wheel and the hand loom flourished. The pupils are delighted with this part of the work; it casts the glamour of romantic old times over the things which they handle daily. They come to this study of a history of that in which they are deeply concerned with an interest as vivid as it was dull for the dates of battles and the political intrigues of school history. Every lecture and every visit to factory or workshop, every store experience is an opportunity for them to write, and they seize it eagerly. They want to tell of the things they have learned and are anxious to learn to express clearly and accurately that which comes tumbling from their lips. It often happens that these girls are really dumb before pencil and paper; they cannot write a sentence. They struggle hard to overcome this obstacle to their free expression.

Wherever a natural interest has been aroused the school responds to it naturally. That is the value of a flexible curriculum and of a teacher who will take advantage of its flexibility,—a teacher with a wide general knowledge and a talent for adaptability as well as accurate knowledge of the subject of salesmanship.

Of course, the program of the Union Salesmanship School cannot, and should not, be reproduced exactly for a continuation school which will deal with children between fourteen and seventeen years of age, since whatever knowledge they may have acquired in their elementary schooling will not have been dulled by disuse. That is, it is not probable that so large an amount of time will have to be spent in the review of elementary school subjects. On the other hand, such a young group will have had very little chance at selling. They will not have so wide a basis of experience for training. They will, however, have enough “store” experience to appreciate the relation between the school and the store, no matter in what department they are working. It will also be possible to follow farther than the Union Salesmanship School can the lines of interest of the pupils into the wide fields of commercial and civic affairs. It will be possible in such a school to do even more for the young people than the Union School has ever hoped to do.

Surely, then, there is no question about a part-time school for the children between fourteen and seventeen years of the department stores. The stores and the public need efficient salesmen and saleswomen, and the department-store employees need to be efficient to be happy and to hope for prosperity. There are none of the usual difficulties in the way of establishing the school; the way has been paved by a successful experiment; no expensive equipment to be acquired, no opposition of the industrial leaders to overcome. Here, if anywhere, the path is smooth for a part-time school.



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